252nd Acs National Meeting Philadelphia Pa August 21 25

Surveys the state-of-knowledge in the development of polymers and high-strength fibers, and elucidates their structure-property relationships. Emphasizes polymer compositions and related fiber structures and properties. Reviews conventional and high-performance fibers, modifications of aromatic polymers, and liquid crystalline polymers, then goes on to cover aromatic polyamides, polyhydrazides, polyesters, polyazomethines, polyimides, and heterocyclic polymers. Also compares high-strength aromatic fibers with other various high-performance fibers in terms of their properties and end uses.
From the contents: Robert H Crabtree: Introduction and History. - Montserrat Diéguez, Oscar Pàmies and Carmen Claver: Iridium-catalysed hydrogenation using phosphorous ligands. - David H. Woodmansee and Andreas Pfaltz: Iridium Catalyzed Asymmetric Hydrogenation of Olefins with Chiral N,P and C,N Ligands. - Ourida Saidi and Jonathan M J Williams: Iridium-catalyzed Hydrogen Transfer Reactions. - John F. Bower and Michael J. Krische: Formation of C-C Bonds via Iridium Catalyzed Hydrogenation and Transfer Hydrogenation. - Jongwook Choi, Alan S. Goldman: Ir-Catalyzed Functionalization of C□H Bonds. - Mark P. Pouy and John F. Hartwig: Iridium-Catalyzed Allylic Substitution. - Daniel Carmona and Luis A. Oro: Iridium-catalyzed 1.3-dipolar cycloadditions.
Advanced Nanomaterials for Catalysis and Energy: Synthesis, Characterization and Applications outlines new approaches to the synthesis of nanomaterials (synthesis in flow conditions, laser electrodispersion of single metals or alloys on carbon or oxide supports, mechanochemistry, sol-gel routes, etc.) to provide systems with a narrow particle size distribution, controlled metal-support interaction and nanocomposites with uniform spatial distribution of domains of different phases, even in dense sintered materials. Methods for characterization of real structure and surface properties of nanomaterials are discussed, including synchrotron radiation diffraction and X-ray photoelectron spectroscopy studies, neutronography, transmission/scanning electron microscopy with elemental analysis, and more. The book covers the effect of nanosystems' composition, bulk and surface properties, metal-support interaction, particle size and morphology, deposition density, etc. on their functional properties (transport features, catalytic activity and reaction mechanism). Finally, it includes examples of various developed nanostructured solid electrolytes and mixed ionic-electronic conductors as materials in solid oxide fuel cells and asymmetric supported membranes for oxygen and hydrogen separation. Outlines synthetic and characterization methods for nanocatalysts Relates nanocatalysts' properties to their specific applications Proposes optimization methods aiming at specific applications
Cellulose Science and Technology
The African Repository
Computational and Data-Driven Chemistry Using Artificial Intelligence
Metal Vinylidenes and Allenylidenes in Catalysis
Modern Crop Protection Compounds
Present Challenges, Future Opportunities

As a spectroscopic method, nuclear magnetic resonance (NMR) has seen spectacular growth, both as a technique and in its applications. Today's applications of NMR span a wide range of scientific disciplines, from physics to biology to medicine. Each volume of Nuclear Magnetic Resonance comprises a combination of annual and biennial reports which together provide comprehensive coverage of the literature on this topic. This Specialist Periodical Report reflects the growing volume of published work involving NMR techniques and applications, in particular NMR of natural macromolecules, which is covered in two reports: NMR of Proteins and Nucleic Acids; and NMR of Carbohydrates, Lipids and Membranes. For those wanting to become rapidly acquainted with specific areas of NMR, Nuclear Magnetic Resonance provides unrivalled scope of coverage. Seasoned practitioners of NMR will find this an invaluable source of current methods and applications. Specialist Periodical Reports provide systematic and detailed review coverage in major areas of chemical research. Compiled by teams of leading experts in their specialist fields, this series is designed to help the chemistry community keep current with the latest developments in their field. Each volume in the series is published either annually or biennially and is a superb reference point for researchers. www.rsc.org/spr

The main focus of the book is the design, synthesis and characterization of amphiphile self-assemblies and the dynamic assessment of these assemblies as delivery systems for drugs and nucleic acids. As delivery systems, these supra-molecular assemblies have the ability to change the pharmacokinetics and volume of distribution of their cargo, to protect it from premature decomposition or inactivation, and to control the spatial-temporal location and duration of the therapeutic effect associated with cargo delivery. Different chapters of the book present delivery systems made out of large variety of amphiphiles, including simple surfactants, gemini surfactants, pseudo-gemini surfactants, lipids, lipophilic polycations, dendrimers, natural and synthetic polymers and their conjugates. The book brings together contributions from researchers relying on both strategies, aimed to foster a more cohesive understanding on how structure, packing parameter, physicochemical and interfacial properties of individual amphiphiles affect their self-assembling, loading, dynamic stability and release properties, in vitro and in vivo. These contributing authors are from the U.S., Europe and Asia, all of whom are at the forefront of their fields of study, providing the reader an up-to-date, broad perspective on the latest concepts and technologies related with design, synthesis and characterization of amphiphile self-assemblies and their use as delivery systems for drugs and nucleic acids.

The leading reference on this topic has just gotten better. Building on the success of the previous two editions, all the chapters have been updated to reflect the latest developments in the field, and new chapters have been added on picolinic acids, oxathiapiprolin, flupyradifurone, and other topics. This third edition presents the most important active ingredients of modern agrochemicals, with one volume each for herbicides, fungicides, and insecticides. The international team of first-class authors from such renowned crop science companies as Bayer, Syngenta, Dow AgroSciences, DuPont (now Corteva Agriscience), and BASF, address all crucial aspects from the general chemistry and the mode of action to industrial-scale synthesis, as well as from the development of products and formulations to their application in the field. A comprehensive and invaluable source of timely information for all of those working in modern biology, including genetics, biochemistry and chemistry, and for those in modern crop protection science, whether governmental authorities, researchers in agrochemical companies, scientists at universities, conservationists, or managers in organizations and companies involved in improvements to agricultural production.

Water Quality and Pesticides
Energy & Fuels Preprints Presented at the 252nd ACS National Meeting & Exhibition 2016
Supra-Molecular Assemblies with Tuned Physicochemical Properties for Delivery Applications
Advanced Nanomaterials for Catalysis and Energy
Synthesis, Characterization and Applications
Nano-Enabled Technologies for Water Remediation

This book provides an overview of the design and physico-chemical properties of nanoparticles developed for biomedical applications such as targeting and detection of pathologies, nanovectorization of drugs, radiosensitization, metal detection, and nanocomposite implants. The considerations necessary when developing a new nanomedicine are also developed, including toxi investigation, biodistribution, and efficacy. This book provides an accurate and current representation of the field by addressing the promises and hurdles of nanomedicine via 20 different pertinent studies. Covering a wide range of areas, this book is an excellent partner for physico-chemists, doctors, pharmacologists, and biochemists working on nanosciences dedicated to med industry and in academia.

This book bridges the gap between theory and practice. It provides fundamental information on heterogeneous catalysis and the practicalities of the catalysts and processes used in producing ammonia, hydrogen and methanol via hydrocarbon steam reforming. It also covers the oxidation reactions in making formaldehyde from methanol, nitric acid from ammonia and sulphuric a sulphur dioxide. Designed for use in the chemical industry and by those in teaching, research and the study of industrial catalysts and catalytic processes. Students will also find this book extremely useful for obtaining practical information not available in more conventional textbooks.

This book provides a summary of the main obstacles for creating and maintaining high standards of health and safety in higher education and research organisations. The obstacles include high staff turnover and an uncertain and constantly evolving research environment, small groups lacking unified management structure, deadline time pressures, restricted funding models an school" culture. Often the Health and Safety specialists and personnel managers in these organisations find themselves reiterating the same information, which gets lost as soon as the new cohort of workers arrives. Providing insight into methods of managing health and safety, training, and supervision, which help to build a strong and reliable health and safety system, this boo "best practices" from experienced safety professionals and researchers in Europe and the United States. These experiences demonstrate how health and safety professionals have overcome these issues and provide readers with ideas and models they can use in their own organisations. The information contained within is aimed at health and safety professionals and manage research organisations conducting scientific and engineering research with transient workers and students worldwide.

Abstracts of Papers
Bishop Richard Allen, the AME Church, and the Black Founding Fathers
Current Catalog
Platform Technologies in Drug Discovery and Validation
Iridium Catalysis
Index of Conference Proceedings Received

Computational and Data-Driven Chemistry Using Artificial Intelligence: Volume 1: Fundamentals, Methods and Applications highlights fundamental knowledge and current developments in the field, giving readers insight into how these tools can be harnessed to enhance their own work. Offering the ability to process large or complex data-sets, compare molecular characteristics and behaviors, and help researchers design or identify new structures, Artificial Intelligence (AI) holds huge potential to revolutionize the future of chemistry. Volume 1 explores the fundamental knowledge and current methods being used to apply AI across a whole host of chemistry applications. Drawing on the knowledge of its expert team of global contributors, the book offers fascinating insight into this rapidly developing field and serves as a great resource for all those interested in exploring the opportunities afforded by the intersection of chemistry and AI in their own work. Part 1 provides foundational information on AI in chemistry, with an introduction to the field and guidance on database usage and statistical analysis to help support newcomers to the field. Part 2 then goes on to discuss approaches currently used to address problems in broad areas such as computational and theoretical chemistry; materials, synthetic and medicinal chemistry; crystallography, analytical chemistry, and spectroscopy. Finally, potential future trends in the field are discussed. Provides an accessible introduction to the current state and future possibilities for AI in chemistry Explores how computational chemistry methods and approaches can both enhance and be enhanced by AI Highlights the interdisciplinary and broad applicability of AI tools across a wide range of chemistry fields

With the need to combat emerging infectious diseases, research around antimicrobial biomaterials and their applications is booming. This book provides the field with a much-needed fundamental overview of the science, addressing the chemistry of a broad range of biomaterial types, and their applications in the biomedical industry. Materials covered include polymers, from those with inherent antimicrobial activity to those that release antimicrobial agents, antimicrobial ceramics and inorganic compounds, such as metal based antimicrobial additives, and the developing field of biomimetic materials, are discussed. Surfaces, coatings and adhesives are covered, whilst the applications of these antimicrobial materials in biomedical applications, from catheters to orthopaedics, dentistry to ophthalmology, are explored. Edited by international leaders and with contributions from the best in the field, this book is the go-to resource for graduates and researchers in biomaterials science, biomedical engineering, chemical engineering, and materials and polymer chemistry.

Antibody–drug conjugates (ADCs) represent one of the most promising and exciting areas of anticancer drug discovery. Five ADCs are now approved in the US and EU [i.e., ado-trastuzumab emtansine (KadcylaTM), brentuximab vedotin (AdcetrisTM), inotuzumab ozogamicin (BesponsaTM), gemtuzumab ozogamicin (MylotargTM) and moxetumomab pasudotox-tdfk (Lumoxiti®)] and over 70 others are in various stages of clinical development, with impressive interim results being reported for many. The technology is based on the concept of delivering a cytotoxic payload selectively to cancer cells by attaching it to an antibody targeted to antigens on the cell surfaces. This approach has several advantages including the ability to select patients as likely responders based on the presence of antigen on the surface of their cancer cells and a wider therapeutic index, given that ADC targeting enables a more efficient delivery of cytotoxic agents to cancer cells than can be achieved by conventional chemotherapy, thus minimising systemic toxicity. Although there are many examples of antibodies that have been developed for this purpose, along with numerous linker technologies used to attach the cytotoxic agent to the antibody, there is presently a relatively small number of payload molecules in clinical use. The purpose of this book is to describe the variety of payloads used to date, along with a discussion of their advantages and disadvantages and to provide information on novel payloads at the research stage that may be used clinically in the future.

Freedom's Prophet
Environmental Health Perspectives
Chemical & Metallurgical Engineering
Nontraditional Careers for Chemists
From Reactivity to Applications in Synthesis
Photochemistry of Heterocyclic Compounds

Focusing on preparation and applications in synthesis and catalysis, this book finally closes a gap in the literature by summarizing this hot topic for the first time. As such, it gathers in one volume the key features of metal vinylidene and allenylidene complexes as well as reactive species and covers applications in metathesis, polymerization, molecular materials, carbon rich compounds and fine chemical production. The emphasis here is on the selective transformations of alkynes and enynes plus simple and complex molecules containing a triple C-C bond. The result is a must-have ready reference for organic, catalytic, complex, theoretical and polymer chemists, as well as those working with/on organometallics.

Energy & Fuels Preprints Presented at the 252nd ACS National Meeting & Exhibition 2016Division of Energy & Fuels, American Chemical Society : Philadelphia, Pennsylvania, USA, 21-25 August 2016Platform Technologies in Drug Discovery and ValidationAcademic Press

Nano-Enabled Technologies for Water Remediation highlights several aspects of wastewater treatment using low-dimensional carbon-based materials. The book also focuses on advances in membrane-based separation, specifically on the pressure driven membrane process. In the case of membrane advances, the focus is exclusively on metal and metal oxide, mixed matrix membranes, GO, and CNT loaded membranes for targeted pollutant removal. Further, new and upcoming technologies of membrane preparation, via the electrospinning method, and advances in membrane distillation and wastewater remediation are discussed. In addition, the book includes coverage of recent advances occurring in sustainable technologies for wastewater remediation with bio-active nanomaterials, bio-inspired, and bio-templated nanomaterials which assist readers in gaining a new perspective for implementing nature-mimicked designs for water treatment and conservation. Covers fundamental theories for complex technologies so that the readers do not need to sift through large quantities of available literature Provides information on major nano-enabled technologies for wastewater treatment, such as composite membranes, electrospun nanofibrous membranes, visible-light catalysts, multi-functional adsorbents, hydrogels, bio-active materials, bio-inspired materials, and more Assesses the major challenges to integrating nanotechnology solutions to water remediation processes in a scalable and cost-efficient manner

Antimicrobial Materials for Biomedical Applications
Aromatic High-Strength Fibers
Nanomedicine for Cancer Diagnosis and Therapy
Endosulfan (Thiodan)
Education in Sierra Leone
Fundamentals, Methods and Applications

Organophosphorus Chemistry provides a comprehensive annual review of the literature. Coverage includes phosphines and their chalcogenides, phosphonium salts, low coordination number phosphorus compounds, penta- and hexa-coordinated compounds, tervalent phosphorus acids, nucleotides and nucleic acids, ylides and related compounds, and phosphazenes. The series will be of value to research workers in universities, government and industrial research organisations, whose work involves the use of organophosphorus compounds. It provides a concise but comprehensive survey of a vast field of study with a wide variety of applications, enabling the reader to rapidly keep abreast of the latest developments in their specialist areas.

After a decade-long civil war, Sierra Leone witnessed an unprecedented surge in school enrollments at the primary and then the secondary levels. Committed to the Education for All objectives, the government further encouraged greater access to school. The country must now negotiate the transition from postwar recovery to regular delivery of education services. The main tasks ahead include reaching the remaining out-of-school children and improving the quality of the learning environment and, ultimately, of learning outcomes. Success will depend on the unrelenting, strong commitment of the government, the capacity of providers to effectively deliver education services, and a sustainable financial framework.

This book addresses both classic concepts and state-of-the-art technologies surrounding cellulose science and technology. Integrating nanoscience and applications in materials, energy, biotechnology, and more, the book appeals broadly to students and researchers in chemistry, materials, energy, and environmental science. · Includes contributions from leading cellulose scientists worldwide, with five Anselm Payen Cellulose Award winners and two Hayashi Jisuke Cellulose Award winners · Deals with a highly applicable and timely topic, considering the current activities in the fields of bioeconomies, biorefineries, and biomass utilization · Maximizes readership by combining fundamental science and application development

Alphabetical Index ... from Volume One to Volume Ten, Both Inclusive
Supplements
New Formulas in Chemistry
The African Repository and Colonial Journal
Chemistry, Analysis, and Applications
Nuclear Magnetic Resonance

Electrospinning is a versatile and effective technique widely used to manufacture nanofibrous structures from a diversity of materials (synthetic, natural or inorganic). The electrospun nanofibrous meshes' composition, morphology, porosity, and surface functionality support the development of advanced solutions for many biomedical applications. The Special Issue on "Electrospun Nanofibers for Biomedical Applications" assembles a set of original and highly-innovative contributions showcasing advanced devices and therapies based on or involving electrospun meshes. It comprises 13 original research papers covering topics that span from biomaterial scaffolds' structure and functionalization, nanocomposites, antibacterial nanofibrous systems, wound dressings, monitoring devices, electrical stimulation, bone tissue engineering to first-in-human clinical trials. This publication also includes four review papers focused on drug delivery and tissue engineering applications.
"Contrary to what some people think, an education and background in chemistry prepares you for much more than just a laboratory career. The broad science education, logical and analytical thinking, research methods, and other professional skills are of value to a wide variety of employers, and are essential for a plethora of positions. In addition, those who are interested in chemistry tend to have some similar personality characteristics, which lead to success in certain types of positions. Realizing these two things opens up a world of possibilities for the professional chemist, and allows the selection of a career path that truly is the best fit for your own personal skills, abilities, and interests.""Each chapter in this book provides background information on a nontraditional field and a variety of positions within that field, including typical tasks, education or training requirements, and personal characteristics that contribute to a successful career. Each chapter also contains detailed profiles of several chemists who have achieved success and personal satisfaction in various types of positions in that field. These interesting and varied career histories explain how these chemists got where they are, details what motivates them, and gives advice for others considering the same path, in both the short and long term.""Specific career fields profiled include communication, chemical information, patents, sales and marketing, business development, regulatory affairs, public policy, safety, human resources, and computers, among others. Along the way you will learn how to seek out and evaluate new career options, so even if none of the careers profiled is right for you, you can continue the exploration on your own until you find the one that is."--Back cover.
First multi-year cumulation covers six years: 1965-70.
Animal Cell Bioreactors
Electrospun Nanofibers for Biomedical Applications
Control of Amphiphile Self-Assembling at the Molecular Level

Abstracts of Papers - American Chemical Society
Catalyst Handbook

To conserve resources, protect the environment, and yet formulate high performance coatings at an acceptable cost: these challenges are readily met by high solids. Such systems are the epitome of high performance and low environmental impact. They are usually the best option where solvent-borne systems would otherwise be the only choice. This book delivers comprehensive knowledge in the field of high solid systems. More especially, it provides an overview of the various classes of binders and ways of transforming them into high solid binders. It lists a broad range of options and approaches for tackling technological and environmental problems.
Membrane integrity is in an interesting combination of science, engineering, and regulations. The book introduces the reader to the subject in the context of drinking water filtration. Both theoretical and practical aspects of membrane integrity testing are discussed along with historical and future technologies. Discussed are the types and causes of integrity breaches, tests to perform to discover them, how to establish a membrane integrity testing program and government disinfection regulations.
Most composites, particularly those made using thermoset resins, cannot be recycled or reused. As a result, most of them end up in landfills at the end of their useful life which is neither sustainable nor environment-friendly. Various laws enacted by Governments around the world and heightened global awareness about sustainability and global warming is changing this situation. Significant research is being conducted in developing and utilizing sustainable fibers and resins, mostly derived from plant, to fabricate 'Green' composites. The significant progress in the past 20 or so years in this field has led to the development of green composites with high strength or so called Advanced Green Composites. More interestingly, green composites have also acquired various different properties such as fire resistance, transparency, barrier to gases and others. The term 'advanced' which only included high strength and stiffness now includes all these special properties. The world is on the cusp of a major change, and once fully developed, such composites could be used in applications ranging from automobiles to sporting goods, from circuit boards to housing and from furniture to packaging. This book, by presenting the state-of-the-art developments in many aspects of advanced green composites adds significantly to the knowledge base that is critical for their success of expanding their use in applications never seen before. The chapters are written by world's leading researchers and present in-depth information in a simple way. This provides readers and researchers the latest developments in the field of 'Green' resins (with ways of strengthening them), High Strength Green Fibers (including micro and nano-cellulose fibrils/fibers) and Green Composites in the first few chapters. The introductory chapter summarizes the consequences of using conventional, petroleum-based materials and the need for green composites as well as the progress being made in this field. After that the book delves in to Advanced Green Composites in a broader sense and includes chapters on High Strength Green Composites, Self-healing Green Composites, Transparent Green Composites, All-cellulose composites, Toughened Green Composites, Green Biofoams, Bioinspired Shape Memory Composites, etc. The chapters are written by the experts who are highly respected in their fields.
Green Electrospinning
Integrity Testing for Low-pressure Membranes
Annual cumulation
The African Repository ...
Cytotoxic Payloads for AntibodyDrug Conjugates
Advanced Green Composites
Looks at the life of the first black pamphleteer, abolitionist, and founder of the African Methodist Episcopal Church.
The last two decades have seen electrospinning of nanofibers performed mainly from solutions of toxic organic solvents. The increase in demand for scaling up electrospinning in recent years therefore requires an environmentally friendly process free of organic solvents. This book addresses techniques for clean and safe electrospinning in the fabrication of green nanofibers and their potential applications.
Animal Cell Bioreactors provides an introduction to the underlying principles and strategies in the in vitro cell culture biotechnology. It addresses engineering aspects such as mass transfer, instrumentation, and control ensuring successful design and operation of animal cell bioreactors. The goal is to provide a comprehensive analysis and review in the advancement of the bioreactor systems for large-scale animal cell cultures. The book is organized into four parts. Part I traces the historical development of animal cell biotechnology. It presents examples of work in progress that seeks to make animal cell biotechnology processes as productive on a cost per unit of product basis as that achieved by other microbial systems. Part II includes chapters dealing with the implications of cell biology in animal cell biotechnology; protein-bound oligosaccharides and their structures; the development of serum-free media and its use in the production of biologically active substances; and the metabolism of mammalian cells. Part III focuses on animal cell cultivation, covering topics such as the fixed bed immobilized culture; three-dimensional microcarriers; and hydrodynamic phenomena in microcarrier cultures. Part IV discusses the design, operation, and control of animal cell bioreactors.
Third Chemical Congress of North America, Toronto, Canada, June 5-10, 1988
High Solid Binders
Biomedical Applications of Nanoparticles
Division of Energy & Fuels, American Chemical Society : Philadelphia, Pennsylvania, USA, 21-25 August 2016
Organophosphorus Chemistry
Challenges for Health and Safety in Higher Education and Research Organisations

Platform Technologies in Drug Discovery and Validation, Volume 50, the latest release in the Annual Reports in Medicinal Chemistry series, provides timely and critical reviews of important topics in medicinal chemistry, with an emphasis on emerging topics in the biological sciences. Topics covered in this new volume include DELT, Oligos: ASO, siRNA, CRISPR, Micro-fluidic chemistry, High throughput screening, Kinase-centric computational drug development, Virtual Screening, Phenotypic screening, PROTACS, Chemical Biology, Fragment-based lead generation, Antibody-Drug Conjugates, Antibody-recruiting small molecules, Deuteration, and Peptides. Unique for its treatment of platform technologies for medicinal chemistry and target validation Provides a single, rich volume that summaries a broad spectrum of expertise relevant to the field Presents state-of-the-art summaries of platform technologies

This book reviews the current applications and future prospects of nanomaterials in cancer diagnostics and therapy. Nanomaterials have recently emerged as a remarkable and promising tool for cancer therapy and diagnosis, due to their broad range of intrinsic molecular properties. To overcome the current limitations of nanoparticles in drug delivery systems, attempts have been made to synthesize nanoparticles from biological materials for targeted cancer therapy. This book provides concise evaluations of various potential bio-inspired platforms that mimic natural components of the body and offer effective and versatile drug delivery systems for cancer therapy. It also assesses the potential of nanoparticles to enhance the outcomes of cancer immunotherapy via immune cell activation and tumor microenvironment modulation. The book also summarizes in the applications of nanomaterials for the detection, prevention, and treatment of solid tumors and in the treatment of leukemia and lymphomas. In closing, it discusses ethical issues in nanomedicine, including risk assessment, risk management, and risk communication during clinical trials. The book offers offers a valuable source of information for students, academics, researchers, scientists, clinicians, and healthcare professionals working in nanotechnology and cancer research.