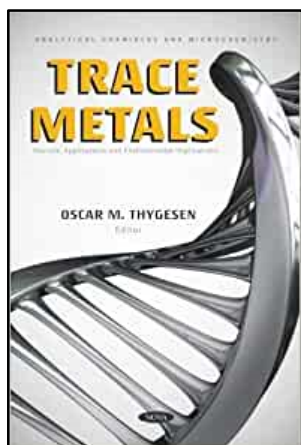


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Analytical Chemistry



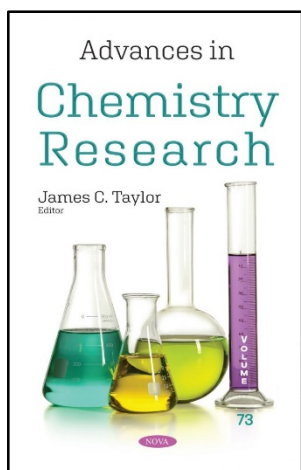
Trace Metals - Sources, Applications and Environmental Implications

Edited by Oscar M. Thygesen

Trace metals are necessary for the proper functioning of living organisms and are absorbed by the body through diet or environmental exposure. However, excessive intake of trace metals can cause health problems. As such, the study of the presence of trace metals in the environment and their effects on health is important. This volume includes four chapters that provide details about trace metals in various contexts.

PB 9781685077976 £69.99 April 2022 Nova Science Publishers, Inc 177 pages

Chemistry



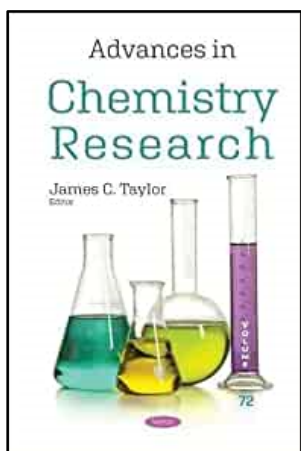
Advances in Chemistry Research. Volume 73

Edited by James C. Taylor

This volume includes eight chapters that detail recent advances in chemistry research. Chapter One focuses on the kinetic-energy/information probes of chemical processes. Chapter Two reviews the chemistry and application of acrylamide and polyacrylamide as well as associated health risks. Chapter Three discusses inter- and intra-molecular force processes and absorption/luminescence energies in inorganic supramolecular systems in complexes and clusters based on gold. Chapter Four provides various applications, significant advancements, and future opportunities of the Chemical Reactor Network method.

Chapter Five includes an overview of nanocellulose and discusses various factors that affect its surface morphology. Chapter Six presents a chemical product design methodology applied to complex fluids such as Pickering emulsions. Chapter Seven summarizes recent developments for H₂O₂-based green oxidation reactions using different transition metal salt catalysts. Finally, Chapter Eight provides a green perspective on the use of Oxone in organic synthesis.

HB 9798886970975 £221.99 September 2022 Nova Science Publishers, Inc 307 pages



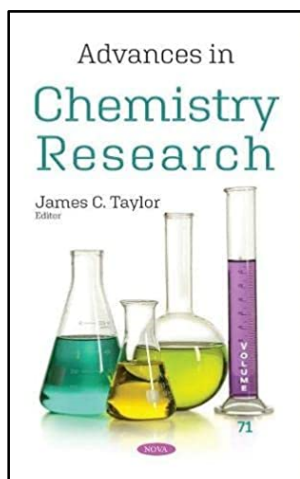
Advances in Chemistry Research - Volume 72

Edited by James C. Taylor

This volume includes six chapters describing recent advancements in chemistry research. Chapter One reviews the recent progress and future prospects of blue emitters in view of efficiency and stability. Chapter Two examines the composition of cottonseed, cottonseed oil as a fuel, transesterification of cottonseed oil, and fuel properties of cottonseed oil methyl ester. Chapter Three examines the existing body of literature on the removal of various toxic cations by organobentonites in static and dynamic conditions.

Chapter Four discusses the role of superoxide dismutase in oxygen elimination systems and the utility of superoxide dismutase in future therapeutics. Chapter Five reviews recent theoretical attempts to address strong electron correlation effects within the quantum emitter coupled to plasmonic metal nanoparticles. Finally, Chapter Six investigates the effect of cottonseed oil biodiesel addition in diesel fuel on the combustion, performance, and exhaust emissions of a single-cylinder diesel engine.

HB 9781685077952 £221.99 April 2022 Nova Science Publishers, Inc 291 pages

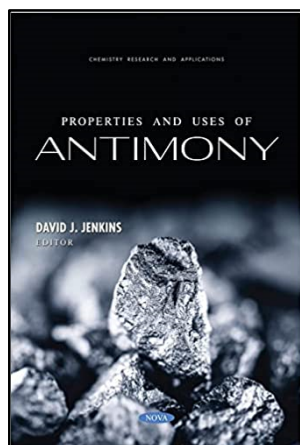


Advances in Chemistry Research - Volume 71

Edited by James C. Taylor

This volume includes eight chapters describing recent advancements in chemistry research. Chapter One compares commercially available equipment with a novel aerosol detection and measurement method. Chapter Two is a review of preparation methods and biological activity of amino acid Schiff base compounds and their metal complexes. Chapter Three provides an insight into the antioxidant activity of eugenol, studied from its various sources and through different methods, as well as its applications in the food industry for the purpose of extending shelf life of various products. Chapter Four discusses the synthesis, luminescence and biological activities of imidazole and bicyclic imidazole derivatives. Chapter Five analyses the current and emerging applications of various encapsulation techniques such as spray-drying, fluidized bed coating, spray-chilling, coacervation, extrusion, emulsification and freeze-drying for delivery of eugenol. Chapter Six investigates the mechanism, kinetics and thermochemistry of the gas phase reactions of methyl fluoroacetate. Chapter Seven examines in detail the health effects and sources of caffeine. Finally, Chapter Eight evaluates the cytotoxic, genotoxic, and oxidative effects of octodrine when consumed alone or with caffeine.

HB 9781685076160 £221.99 February 2022 Nova Science Publishers, Inc 198 pages



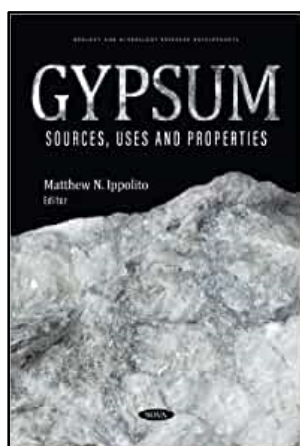
Properties and Uses of Antimony - Chemistry Research and Applications

Edited by David J. Jenkins

Antimony (Sb) is a semimetallic chemical element which can exist in metallic form or non-metallic form. Antimony has a variety of applications and properties which are described in the five chapters of this book. Chapter One describes the structural and electrochemical properties of Sb and examines its application in rechargeable batteries. Chapter Two provides a complete picture of phase equilibria in the Cu-Sb-S system obtained experimentally by differential thermal analysis and powder X-ray technique. Chapter Three characterizes new layered high-entropy alloys based on antimony and bismuth chalcogenides with tetradymite structure. Chapter Four determines the phase equilibria in the PbTe-Bi₂Te₃-Sb₂Te₃ system using differential thermal analysis, X-ray diffraction, and scanning electron microscopy techniques. Lastly, Chapter Five determines the thermodynamic properties of the manganese-antimony tellurides using an electromotive force method.

PB 9798886970814 £72.99 August 2022 Nova Science Publishers, Inc 134 pages

Mineralogy & Gems

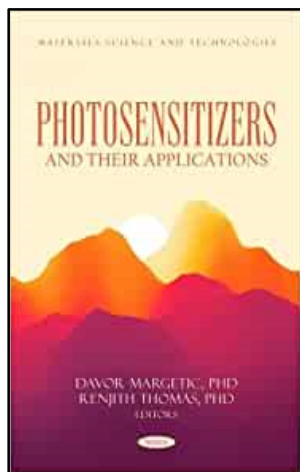


Gypsum - Sources, Uses and Properties

Edited by Matthew N. Ippolito

Gypsum is a soft sulphate mineral made up of calcium sulphate dihydrate and has various applications, such as fertilizer, chalk, and plaster. This book includes five chapters that provide further details on this material. Chapter One focuses on some recently reported gypsum composite plasterboards as well as the functions and properties of various other composite plasterboards. Chapter Two deals with the methods of preparation and utilization of gypsum-based lightweight materials. Chapter Three shows the possibilities of multiple strengthening of gypsum products by surface treatment and impregnation with water-acrylic and epoxy compound. Chapter Four deals with the effect of waste plastic fibre inclusion on the mechanical and some durability properties of foamed gypsum. Lastly, Chapter Five captures the current state of art of gypsum utilization in geotechnical applications.

PB 9781685079321 £72.99 May 2022 Nova Science Publishers, Inc 96 pages

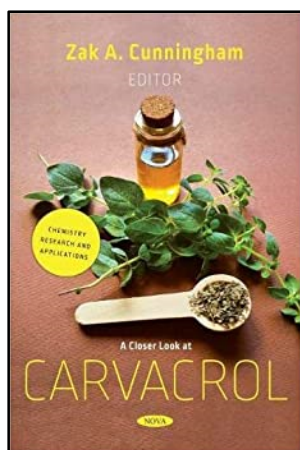


Photosensitizers and Their Applications

Edited by Davor Margetic

Application of light in chemistry presents an active field of research with a very promising outlook, particularly in technology and medicine. Molecules which mediate the transfer of light to another molecule (photosensitizers) are the cornerstone of exploitation of light. The current state of research and recent progress in applications of photosensitizers in diverse fields are documented in twelve chapters written by scientists from around the world. Chapter 1 gives a general overview on the applications of photosensitizers in synthetic organic chemistry. This review is followed by Chapters 2-7, which deal with the various applications of photosensitizers in medicine, in particular for photodynamic cancer therapy. The subsequent Chapters 8-12 cover different aspects of applications of photosensitizers in material science, such as for dye-sensitized solar cells and photo-responsive materials.

HB 9781685078805 £203.99 August 2022 Nova Science Publishers, Inc 345 pages

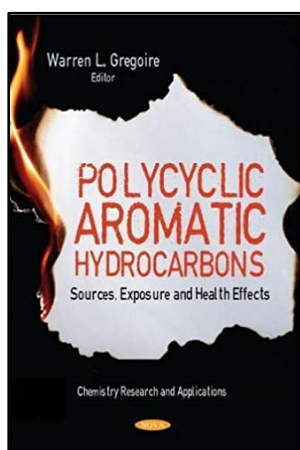


A Closer Look at Carvacrol

Edited by Zak A. Cunningham

Carvacrol is a monoterpene phenol found in essential oils of aromatic plants such as thyme and oregano. It is used as a food additive and as a fragrance in cosmetic products. As explored in the five chapters of this book, carvacrol also has applications in health due to its antibacterial and antifungal effects. Chapter One includes an overview of the biological and therapeutic properties of carvacrol. Chapter Two discusses carvacrol's potential as part of a barrier technology in the thermal processing of meat products to limit and control the growth of pathogenic microorganisms. Chapter Three deals with the antibiofilm properties of carvacrol and its potential to control biofilm formation in meat, dairy, and fresh produce industries. Chapter Four provides an in-depth review of the emulsification of essential oils that contain carvacrol, addressing various preparation methodologies and types of stabilizers. Lastly, Chapter Five details strategies, preparation methods, and trends in connection with carvacrol encapsulation.

PB 9781685076276 £84.99 February 2022 Nova Science Publishers, Inc 185 pages

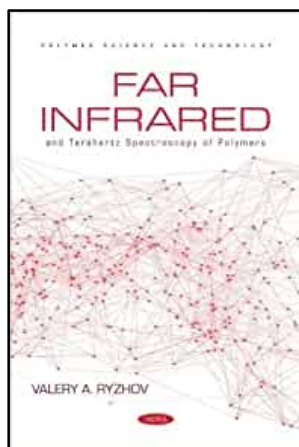


Polycyclic Aromatic Hydrocarbons - Sources, Exposure and Health Effects

Edited by Warren L. Gregoire

Polycyclic Aromatic Hydrocarbons (PAHs) are chemicals that occur naturally in coal, oil, and gasoline, and are also produced when wood, tobacco, and other materials are burned. Exposure to PAHs can lead to negative health consequences, so remediating their presence in the environment is significant. Chapter One uses machine learning and artificial intelligence to explain the behaviour of PAHs in indoor and outdoor environments of a university building. Chapter Two discusses PAH exposure and associated effects in elasmobranchs. Chapter Three focuses on the potential effects of plants on the phytoremediation of agricultural soils and freshwater resources contaminated with PAHs. Chapter Four includes a case study of PAHs levels in samples from the fishery industry. Lastly, Chapter Five evaluates potential associations between biliary PAHs, biomorphometric indices and biliverdin applied as a feeding status proxy in mullet (*Mugil liza*) from a chronically contaminated estuary in Southeastern Brazil.

PB 9781685076269 £72.99 March 2022 Nova Science Publishers, Inc 126 pages

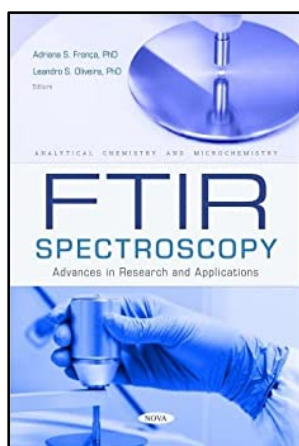


Far Infrared and Terahertz Spectroscopy of Polymers

Valery A. Ryzhov

The presented work summarises and systematises an extensive experimental material of the results of studying polymers using spectroscopy in the low-frequency infrared region. Today, spectroscopic studies in the far infrared region are becoming an important tool for characterising the physical properties of polymers, determined by molecular dynamics and the level of molecular interactions. Low-frequency spectroscopy of intermolecular interactions is the original and most informative source and criterion for establishing the presence of a hydrogen bond in biological substances, multiplets and clusters in ionomers, a criterion for crystallinity, etc. Far IR spectroscopy has proven to be productive in deciphering the molecular nature of solid-state ($\hat{1}$, $\hat{2}$, and $\hat{3}$) relaxation transitions in polymers. This was the result of (1) evaluating the potential barriers and sizes of molecular motion units from the spectra, (2) finding empirical correlations between the spectral parameters and molecular characteristics of polymers, and (3) comparing the results with activation barriers for relaxation transitions.

PB 9781685076627 £84.99 March 2022 Nova Science Publishers, Inc 168 pages



FTIR Spectroscopy - Advances in Research and Applications

Edited by Adriana S. França

Mid-infrared (MIR) or Fourier Transform Infrared (FTIR) spectroscopy is a vibrational spectroscopy technique that identifies chemicals based on the interaction of molecules with electromagnetic radiation in the mid-infrared region. The use of this technique has increased over the last decades due to its many advantages compared with the use of other methods, including non-destruction of the sample, minimal or no sample preparation, and the fact that it does not involve the use of any hazardous chemicals during the analysis.

FTIR Spectroscopy: Advances in Research and Applications presents some of the most recent advances on the application of mid-infrared spectroscopy in biology, medicine and food science. It starts with an overview of chemometric methods that are needed for analysis and interpretation of infrared data (Chapter 1), followed by applications in the analysis of food and biological systems, including food provenance identification (Chapter 2) and structural aspects (Chapter 3), structural analysis of mollusk shells (Chapter 4), and applications in biomedical research (Chapter 5) and cancer diagnosis (Chapter 6). The book is written by an international panel of scientists with extensive expertise in the field of infrared spectroscopy, providing unique views and perspectives on both practical and theoretical applications.

PB 9781685075712 £84.99 May 2022 Nova Science Publishers, Inc 183 pages



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