

Adsorption Of Guar Gum On Potash Slimes Tandfonline

This comprehensive reference collects fundamental theories and recent research from a wide range of fields including biology, biochemistry, physics, applied mathematics, and computer, materials, surface, and colloid science-providing key references, tools, and analytical techniques for practical applications in industrial, agricultural, and forensic processes, as well as in the production of natural and synthetic compounds such as foods, minerals, paints, proteins, pharmaceuticals, polymers, and soaps.

Particles at Fluid Interfaces encompasses the processes and formulations that involve the stabilisation of fluid interfaces by adsorbed particles. The prevalence of these multiphase materials underpins their use in a broad range of industries from personal care and food technology to oil and mineral processing. The stabilisation conferred by the adsorbed particles can be transient as found in froth flotation or long-lived as occurs within Pickering Emulsions. The particles can range in size from nanoparticles to millimetre-sized particles, and cover a spectrum from collapsed proteins, polymeric colloids of controlled size and shape to high dispersity mineral particles.

Quite possibly the first comprehensive text on galactomannans, Industrial Galactomannan Polysaccharides compiles information on their industrial uses in the form of gums including locust bean, guar, tara, fenugreek, cassia-tara, and Sesbania-bisipinasa varieties. The book describes how galactomannans are currently produced commercially and how they

Discover this timely, comprehensive, and up-to-date exploration of crucial aspects of the use of nanomaterials in analytical chemistry Sample Preparation with Nanomaterials: Next Generation Techniques for Sample Preparation delivers insightful and complete overview of recent progress in the use of nanomaterials in sample preparation. The book begins with an overview of special features of nanomaterials and their applications in analytical sciences. Important types of nanomaterials, like carbon nanotubes and magnetic particles, are reviewed and biological sample preparation and lab-on-a-chip systems are presented. The distinguished author places special emphasis on approaches that tend to green and reduce the cost of sample treatment processes. He also discusses the legal, economical, and toxicity aspects of nanomaterial samples. This book includes extensive reference material, like a complete list of manufacturers, that makes it invaluable for professionals in analytical chemistry. Sample Preparation with Nanomaterials offers considerations of the economic aspects of nanomaterials, as well as the assessment of their toxicity and risk. Readers will also benefit from the inclusion of: A thorough introduction to nanomaterials in the analytical sciences and special properties of nanomaterials for sample preparation An exploration of the mechanism of adsorption and desorption on nanomaterials, including carbon nanomaterials used as adsorbents Discussions of membrane applications of nanomaterials, surface enhanced raman spectroscopy, and the use of nanomaterials for biological sample preparation A treatment of magnetic nanomaterials, lab-on-a-chip nanomaterials, and toxicity and risk assessment of nanomaterials Perfect for analytical chemists, materials scientists, and process engineers, Sample Preparation with Nanomaterials: Next Generation Techniques for Sample Preparation will also earn a place in the libraries of analytical laboratories, universities, and companies who conduct research into nanomaterials and seek a one-stop resource for sample preparation.

Tappi Journal

Adsorption Processes for Water Treatment and Purification

Advances in Composite Materials Development

Carbon Nanomaterial-Based Adsorbents for Water Purification

Handbook of Sustainable Polymers

The progress of technology is a permanent challenge in developing new materials with superior properties in terms of quality and reliability. The demand for increased performance continues to focus materials development efforts on exploring new concepts or new generations of composite materials. The chapters contained in this book represent many examples of research results dedicated to obtaining, characterizing, and mathematically modeling composite materials, especially metal matrix composites, with superior properties having a wide range of applications. The book is addressed to researchers and materials specialists, teachers and students at science and material engineering faculties, and all those interested in advances in science and technology of new materials.

Design and Selection of Performance Surfactants is the resource for clear, informative, in-depth reviews of the most topical areas of surfactant science and technology. This is the second volume in an annual series already recognized as an essential resource for major developments in the field. Topics in this volume include spontaneous polymerization in organized micellar media, the catalytic and kinetic effects in ethoxylation processes, narrow and secondary alcohol ethoxylates, plus the latest advances in fluorsurfactants and carbohydrate-derived surfactants. Further readings cover the cutting-edge, microbial and enzymatic production of biosurfactants advances in the computer modeling of surfactants. International contributors detail the latest applications in oil drilling, floor polishes, and food emulsification. Science and industry are constantly refining research and finding new applications for surface chemical technology. Reading Design and Selection of Performance Surfactants is the most efficient and accessible way for chemists, researchers, and manufacturers to stay abreast of the latest developments.

The breadth and depth of knowledge of gums and stabilisers has increased tremendously over the last two decades, with researchers in industry and academia collaborating to accelerate the growth. Gums and Stabilisers for

the Food Industry 11 presents the latest research in the field of hydrocolloids used in food. Bringing together contributions from international experts, the first section of the book investigates the advances in structure determination and characterisation of hydrocolloids, including the use of capillary electrophoresis. Later sections deal with rheological aspects of hydrocolloids in solutions and gels; the application of hydrocolloids in real food systems; and the interfacial behaviour and gelation of proteins. A discussion of the influence of hydrocolloids on human health is also included. Researchers and other professionals in industry and academia, particularly those involved directly with food science, will welcome this title as a source of the very latest information.

Mineral additives are widespread in industrial manufacturing processes. So-called mineral fillers are used to extend raw materials and cut costs. Recently minerals and associated inorganics have frequently been used for their functionality and other mineral-specific qualities. The emergence of nanoscale minerals parallels the global pursuit of nanotechnology. The use of these minerals plays an important role in low-cost, high-performance application of nanotechnology. This 21-chapter compilation is for mineral suppliers, industrial users of mineral fillers, and those concerned with new trends in mineral processing and nanotechnology. Contributions by leading international researchers highlight the emerging markets and applications of functional fillers and nanoscale minerals.

Innovation in Nano-polysaccharides for Eco-sustainability

Surface Charging and Points of Zero Charge

Industrial Galactomannan Polysaccharides

Chemistry and Technology in Food

Journal of Pulp and Paper Science

Influence of Hydrodynamic Size and Zeta Potential of a Novel Polyelectrolyte Poly(acrylic Acid) Grafted Guar Gum for Adsorption of Pb(II) from Acidic Waste Water

A SANS Study of the Adsorption of Guar Gum on Talc Surfaces

The deterioration of water quality and unavailability of drinkable water are pressing challenges worldwide. The removal of toxic organic and inorganic pollutants from water is vital for a clean environment, as a response to water scarcity. Adsorption-based water technologies are among the most widely used because of their high efficiency and low cost, without relying on a complex infrastructure. In recent years, carbon nanomaterials (CNMs), such as graphene and derivatives, carbon nanotubes, carbon nanofibers, nanoporous carbon, fullerenes, graphitic carbon nitride, and nanodiamonds have been extensively exploited as adsorbents due to their extraordinary surface properties, ease of modification, large surface area, controlled structural varieties, high chemical stability, porosity, low density, ease of regeneration, and reusability. This book provides a thorough overview of the state of the art in carbon nanomaterials as they are used for adsorption applications in water purifications, as well as addressing their toxicological challenges. This volume primarily explores the fundamentals of adsorption, its mechanical aspects, synthesis and properties of CNMs, and adsorption performances of CNMs and their nanocomposites with organic and inorganic materials. Structural engineering and activation processes produce materials with enhanced adsorptive properties and separation efficiencies. Furthermore, the formation of CNMs with 2D and 3D macro-and microstructures and high porosities is a potential approach to improve adsorption performances and extend CNM use at the industrial level. The book also addresses important issues regarding these adsorbents that potentially affect future research and industrial applications of carbon-based nanoadsorbents in water security. Presents advances in multifunctional 3D superstructures of carbon nanomaterials and their composites for adsorption applications Outlines the fundamentals on synthesis and characterization techniques of carbon-based nanostructures and their composites Assesses the major toxicological challenges in using nanostructured materials as adsorbents for water purification

Molecular modeling (MM) tools offer significant benefits in the design of industrial chemical plants and material processing operations. While the role of MM in biological fields is well established, in most cases MM works as an accessory in novel products/materials development rather than a tool for direct innovation. As a result, MM engineers and practitioners are often seized with the question: "How do I leverage these tools to develop novel materials or chemicals in my industry?" Molecular Modeling for the Design of Novel Performance Chemicals and Materials answers this important question via a simple and practical approach to the MM paradigm. Using case studies, it highlights the importance and usability of MM tools and techniques in various industrial applications. The book presents detailed case studies demonstrating diverse applications such as mineral processing, pharmaceuticals, ceramics, energy storage, electronic materials, paints, coatings, agrochemicals, and personal care. The book is divided into themed chapters covering a diverse range of industrial case studies, from pharmaceuticals to cement. While not going too in-depth into fundamental aspects, the book covers almost all paradigms of MM, and references are provided for further learning. The text includes more than 100 color illustrations of molecular models.

Renowned experts give all essential aspects of the techniques and applications of graft copolymers based on polysaccharides.

Polysaccharides are the most abundant natural organic materials and polysaccharide based graft copolymers are of great importance and widely used in various fields. Natural polysaccharides have recently received more attention due to their advantages over synthetic polymers by being non-toxic, biodegradable and available at low cost. Modification of polysaccharides through graft copolymerization

improves the properties of polysaccharides. Grafting is known to improve the characteristic properties of the backbones. Such properties include water repellency, thermal stability, flame resistance, dye-ability and resistance towards acid-base attack and abrasion. Polysaccharides and their graft copolymers find extensive applications in diversified fields. Applications of modified polysaccharides include drug delivery devices, controlled release of fungicides, selective water absorption from oil-water emulsions, purification of water etc.

Suid-Afrikaanse Tydskrif Vir Chemie

INTEGRATED APPROACH ON SYNTHESIS & CHARACTERIZATION OF INDUSTRIAL-AGRO WASTE NANOCOMPOSITE FOR WATER TREATMENT

Encyclopedia of Surface and Colloid Science -

South African Journal of Chemistry

Molecular Modeling for the Design of Novel Performance Chemicals and Materials

Sample Preparation with Nanomaterials

Nanomaterials in Chromatography: Current Trends in Chromatographic Research Technology and Techniques provides recent advancements in the wide variety of chromatographic techniques applied to nanotechnology. As nanomaterials' unique properties can improve detection sensitivity and miniaturize the devices used in analytical procedures, they can substantially affect the evaluation and analysis ability of scientists and researchers and foster exciting developments in separation science. The book includes chapters on such crucial topics as the use of nanomaterials in sample preparation and the legalization of nanomaterials, along with a section on reducing the cost of the analysis process, both in terms of chemicals and time consumption. Presents several techniques for nanomaterials in chromatography, including well-known materials like carbon nanomaterials and functionalized nanomaterials Includes suggested readings at the end of each chapter for those who need further information or specific details, from standard handbooks, to journal articles Covers not only applications of nanomaterials in chromatography, but also their environmental impact in terms of toxicity and economic effects

Undoubtedly the applications of polymers are rapidly evolving. Technology is continually changing and quickly advancing as polymers are needed to solve a variety of day-to-day challenges leading to improvements in quality of life. The Encyclopedia of Polymer Applications presents state-of-the-art research and development on the applications of polymers. This groundbreaking work provides important overviews to help stimulate further advancements in all areas of polymers. This comprehensive multi-volume reference includes articles contributed from a diverse and global team of renowned researchers. It offers a broad-based perspective on a multitude of topics in a variety of applications, as well as detailed research information, figures, tables, illustrations, and references. The encyclopedia provides introductions, classifications, properties, selection, types, technologies, shelf-life, recycling, testing and applications for each of the entries where applicable. It features critical content for both novices and experts including, engineers, scientists (polymer scientists, materials scientists, biomedical engineers, macromolecular chemists), researchers, and students, as well as interested readers in academia, industry, and research institutions.

The Most Detailed Resource Available on Points of Zero Charge With their work growing in complexity, chemists involved with surface phenomena-related projects have outgrown the common resources available to them on points of zero charge (PZC) of oxides. Reporting on a limited number of materials in a limited number of scenarios, these resources often leave scientists wondering if the variances reported in the results they depend upon are due to actual differences in properties among particular samples or due to differences between isoelectric points (IEP) and points of zero charges obtained by titration. Taking on the monumental task of building a complete reference, Marek Kosmulski, a leading authority in the field of surface chemistry (Hirsch index of 22), takes a new approach to provide chemists with the most detailed resource on the points of zero charge of oxides available to date. Surface Charging and Points of Zero Charge presents PZC data on well-defined specimens of materials sorted by trademark, manufacturer (commercial materials), location (natural materials), and specific recipe (synthetic materials). The text emphasizes the comparison between particular results obtained for different portions of the same or very similar material. Synthesizing information published in research reports over the past few decades, this invaluable reference: Characterizes materials in terms of thermochemical data, chemical composition (level of impurities), crystallographic structure, specific surface area (various methods), particular size, and morphology Provides additional references to more detailed sample characterization (SEM and TEM images, XRD patterns, and particle size distributions) Reviews the PZC and IEP--with all possible details regarding the method, type of instrument, and experimental conditions Pays special attention to correlations of the PZC and IEP with other physical quantities and properties, surface charging in mixed and nonaqueous solvents, surface charging at high ionic strengths, and ion-specificity in 1-1 electrolytes All available sources were used to obtain the data in this reference making it the definitive resource on PZC/IEP. Destined to become a classic, Surface Charging and Points of Zero Charge points the way for further research with tried and true methods that help researchers avoid the doubt that can lead to countless hours of unnecessary research. Erratum for this volume can be found on the author's website.

This reference book provides a comprehensive overview of natural gums, resins, and latexes of plants with a focus on their chemistry, biological activities, and practical uses. The content is divided into five main sections each of which contains chapters contributed from valuable experts in their field. Naturally occurring plant products have quite diverse applications in many different industries. The book aims to highlight the important aspects of plant-based gums, resins and latexes as well as provide a strategic framework for further research and development activities on these bioproducts. It will appeal to a broad audience such as biologists, pharmacologists, pharmacists, food technologists and medical practitioners. It is also a useful resource for research investigators of the healthcare industry, academia and students of biomedical sciences.

From Science to Industrial Applications

Fundamentals and Applications

Application of Nanotechnology in Water Research

Adsorption of Carboxymethylcellulose, Guar Gum, and Starch Onto Talc, Sulphides, Oxides, and Salt-type Minerals

Green Chemistry for Dyes Removal from Waste Water

Pulp and Paper Industry

This proceeding is a collection of papers from eleven countries presented at the 3rd UBC-McGill International Symposium on Fundamentals of Mineral Processing. Both high molecular weight polymers (flocculants) and low molecular weight polymers (dispersants) are used in mineral processing. The topics include: experimental methods in studying flocculants and flocculation; polymeric depressants; use of dispersants and flocculants in flotation (sulfide ores, potash ores, coal preparation, etc.), effect of dispersants on pulp rheology; use of flocculants in solid/liquid separation.

Recent Progress in Surface Science, Volume 2 is a 10-chapter text that covers the significant advances in some aspects of surface science, including in catalysis, genetic control of cell surface, and cell membrane. The opening chapter deals with the major factors affecting adsorption at the gas-solid interface. The subsequent chapters explore the advances in understanding of heterogeneous catalysis in terms of fundamental surface processes, as well as the concept of dynamic contact angles. These topics are followed by discussions on emulsions, flotation, and the extraordinary complexity of cell surface structures and their chemical components. Other chapters consider the experimental studies on the physiology of pinocytosis and the principles of plastron respiration. The final chapters are devoted to the isolation, characterization, and electronmicroscopic studies of cell membrane. This book is of value to surface scientists, cell biologists, and researchers in the allied fields.

Biopolymers are becoming an increasingly important area of research as traditional chemical feedstocks run low and concerns about environmental impacts increase. One area of particular interest is their use for more sustainable development of metal nanoparticles. Biopolymer-Based Metal Nanoparticle Chemistry for Sustainability Applications, Volume 2 reviews key uses of biopolymers and biopolymer-based metal nanoparticles for a range of key sustainability-focused applications. After providing contextual examples of applications across the fields of food science, biomedicine and biochemistry, the book goes on to explore further sustainability-focused applications of Biopolymer-Based Metal Nanoparticles in such important areas as catalysis, environmental science, biosensing, and energy. Provides an overview of biopolymer-based metal nanoparticles for a wide range of applications Provides technological details on the synthesis of natural polymer-based metal nanoparticles Explores the role of biopolymer-based metal nanoparticles for more sustainable catalytic processes

Small angle neutron scattering (SANS) is used to study the adsorption of guar gum on the surface of talc in aqueous solutions. Research applies to the processing of nickel sulphide ores containing naturally floating layer silicate minerals such as talc; with guar gum used as flotation reagent.

Chemicals

Current Trends in Chromatographic Research Technology and Techniques

Surfactants in Tribology, Volume 4

Design and Selection of Performance Surfactants

Molecular Weight Effects in Guar Gum Adsorption and Depression of Talc

Gums and Stabilisers for the Food Industry 11

Natural Polymers-Based Green Adsorbents for Water Treatment focuses on the recent development of novel polymeric adsorbents that are green and eco-friendly or biodegradable in nature. The book reviews the synthesis, properties and adsorption applications of natural and green polymer-based adsorbents. It discusses adsorption processes in biopolymer systems, remediation technologies developed to remove environmental pollutants, the usage of natural polymer-based cost-effective and green novel adsorbent materials for the removal of organic and inorganic contaminants, and the efficiency of functionalized polymers, nanosorbents, hydrogels, composites, graft copolymers in the sorption of various pollutants from the environment as well as from the industrial effluents. Researchers working on environmental remediation need a single book, where all data on natural and green adsorbents for water treatment are discussed comprehensively. Natural Polymers-Based Green Adsorbents for Water Treatment addresses this need by providing world-wide leading experts' observations and research. So, this book is a valuable reference for early-career scientist, academic researchers and graduate students in chemical engineering and material science. Presents step-by-step review of processing and modification of natural polymers and their applications in water remediation Analyzes data on natural and green adsorbents for water treatment, meanwhile provides world-wide experts' knowledge to pave the way for further research Includes extensive tables, graphs, figures, bibliographies and references to enhance key concepts This paper examines the adsorption behaviour and influence of two thiol collectors (sodium ethyl xanthate and sodium mercaptobenzothiazole) and three polysaccharide depressants (sodium carboxymethylcellulose, a modified guar gum, and a modified potato starch) on the floatability of pure galena and pure pyrite. Initial tests showed that the polymeric depressants were adsorbed onto the two sulphide minerals. The influence of the polymers on the zeta potentials of the two minerals was also measured. There are indications that the presence of PbOH⁺ and Pb²⁺ ions in solution affect the adsorption of guar gum and starch onto galena. The coadsorption of the collector and the polymer was determined, and it was found that, in certain instances, the order in which the reagents are added can affect the amount of polymer and collector adsorbed. These differences are not apparent in the flotation results. In general, the polymer and the collector can be coadsorbed onto galena and pyrite. The adsorption of the polymers leads to a significant depression of the minerals at low concentrations of the collector, although in most instances the presence of the polymer does not inhibit the adsorption of the collector. The depressing effect of the polymers is reduced at higher concentrations of collector.

The 21st century offers vast challenges for researchers all around the globe, especially regarding the effective use of sustainable polymers and their materials for different applications. With this focus, sustainable polymers are now rising as one of the most feasible alternatives to traditional synthetic polymers/materials for a variety of industrial uses. This book is an archival reference for researchers and students working in the field of sustainable polymers and their applications in industry. It focuses on the processing and applications of diverse sustainable polymers procured from different biorenewable resources that have been rarely reported so far in a single book.

Polysaccharides are the subject of heightened interest today, and this book is a concise and fully up-to-date study of the properties of food polysaccharides, describing their interaction with water, the mass-volume-pressure-relationship, various types of mathematical modeling, and the common phenomenology under different combinations of stimuli. New empirical and theoretical equations, which are not often identified with food technologies, are used to support the findings. Polysaccharide Dispersions: Chemistry and Technology in Food is written in a simple, nontechnical style and should be equally comprehensible to the student, the researcher, the plant manager, and the casual observer with only a modest technical background. Contains fundamental principles, practical applications, and new discoveries regarding polysaccharides Presents material in a simple, easy to understand style Focuses exclusively on the food industry

Particles at Fluid Interfaces

New Markets/new Horizons

Volume 2: Applications

Natural Polymers – Based Green Adsorbents for Water Treatment

Polysaccharide Dispersions

Gums, Resins and Latexes of Plant Origin

Polymeric Materials in Corrosion Inhibition: Fundamentals and Applications brings together the very latest information and techniques in the preparation and application of a broad range of polymeric

materials as corrosion inhibitors in diverse corrosive environments. Sections introduce the fundamentals of polymeric materials, corrosion and corrosion inhibitors and include methodical coverage of polymers as corrosion inhibitors, with separate sections for natural and synthetic polymers. Each chapter guides the reader through the synthesis, properties and application of a specific polymer for corrosion inhibition, including an analysis of advantages and disadvantages and guidance on methods for improved performance. Final chapter cover other important aspects and developments, including adsorption mechanisms, quantum chemical calculations, molecular dynamics and simulations. This is a valuable reference for researchers and advanced students across a range of disciplines, including polymer science, corrosion, electrochemistry, materials science, chemical engineering, and petroleum engineering. Introduces the fundamentals of polymeric materials, applications of polymers, corrosion and corrosion inhibition Provides thorough, systematic coverage of their synthesis, characterization and application, all organized by polymer category Explores advantages and disadvantages of polymers in corrosion inhibition, along with methods to improve performance

Details the water research applications of nanotechnology in various areas including environmental science, remediation, membranes, nanomaterials, and water treatment At the nano size, materials often take on unique and sometimes unexpected properties that result in them being 'tuned' to build faster, lighter, stronger, and more efficient devices and systems, as well as creating new classes of materials. In water research, nanotechnology is applied to develop more cost-effective and high-performance water treatment systems, as well as to provide instant and continuous ways to monitor water quality. This volume presents an array of cutting-edge nanotechnology research in water applications including treatment, remediation, sensing, and pollution prevention. Nanotechnology applications for waste water research have significant impact in maintaining the long-term quality, availability, and viability of water. Regardless of the origin, such as municipal or industrial waste water, its remediation utilizing nanotechnology can not only be recycled and desalinated, but it can simultaneously detect biological and chemical contamination. Application of Nanotechnology in Water Research describes a broad area of nanotechnology and water research where membrane processes (nanofiltration, ultrafiltration, reverse osmosis, and nanoreactive membranes) are considered key components of advanced water purification and desalination technologies that remove, reduce, or neutralize water contaminants that threaten human health and/or ecosystem productivity and integrity. Various nanoparticles and nanomaterials that could be used in water remediation (zeolites, carbon nanotubes, self-assembled monolayer on mesoporous supports, biopolymers, single-enzyme nanoparticles, zero-valent iron nanoparticles, bimetallic iron nanoparticles, and nanoscale semiconductor photocatalysts) are discussed. The book also covers water-borne infectious diseases as well as water-borne pathogens, microbes, and toxicity approach.

This book provides researchers and graduate students with an overview of the latest developments in and applications of adsorption processes for water treatment and purification. In particular, it covers current topics in connection with the modeling and design of adsorption processes, and the synthesis and application of cost-effective adsorbents for the removal of relevant aquatic pollutants. The book describes recent advances and alternatives to improve the performance and efficacy of this water purification technique. In addition, selected chapters are devoted to discussing the reliable modeling and analysis of adsorption data, which are relevant for real-life applications to industrial effluents and groundwater. Overall, the book equips readers with a general perspective of the potential that adsorption processes hold for the removal of emerging water pollutants. It can readily be adopted as part of special courses on environmental engineering, adsorption and water treatment for upper undergraduate and graduate students. Furthermore, the book offers a valuable resource for researchers in water production control, as well as for practitioners interested in applying adsorption processes to real-world problems in water treatment and related areas.

The use of synthetic chemical dyes in various industrial processes, including paper and pulp manufacturing, plastics, dyeing of cloth, leather treatment and printing, has increased considerably over the last few years, resulting in the release of dye-containing industrial effluents into the soil and aquatic ecosystems. The textile industry generates high-polluting wastewaters and their treatment is a very serious problem due to high total dissolved solids (TDS), presence of toxic heavy metals, and the non-biodegradable nature of the dyestuffs in the effluent. The chapters in this book provide an overview of the problem and its solution from different angles. These problems and solutions are presented in a genuinely holistic way by world-renowned researchers. Discussed are various promising techniques to remove dyes, including the use of nanotechnology, ultrasound, microwave, catalysts, biosorption, enzymatic treatments, advanced oxidation processes, etc., all of which are "green." Green Chemistry for Dyes Removal from Wastewater comprehensively discusses: Different types of dyes, their working and methodologies and various physical, chemical and biological treatment methods employed Application of advanced oxidation processes (AOPs) in dye removal whereby highly reactive hydroxyl radicals are generated chemically, photochemically and/or by radiolytic/sonolytic means. The potential of ultrasound as an AOP is discussed as well. Nanotechnology in the treatment of dye removal types of adsorbents for removal of toxic pollutants from aquatic systems Photocatalytic oxidation process for dye degradation under both UV and visible light, application of solar light and solar photoreactor in dye degradation

A SANS Study of the Adsorption of Guar Gum on Talc Surfaces

Advanced Separations by Specialized Sorbents

Transactions of the Technical Section

Proceedings of the Third UBC-McGill Bi-annual International Symposium on Fundamentals of Mineral Processing

Principles of Flotation

Encyclopedia of Polymer Applications, 3 Volume Set

Advanced Separations by Specialized Sorbents opens a new window into sorbent materials, presenting fundamental principles for their syntheses and adsorption properties. The book discusses the techniques used to create specialized sorbents with a wide range of functions that can be used to enhance the separation and/or purification of useful bio

This book discusses the fundamental, synthesis, properties, physico-chemical characterizations and applications of recently explored nanocomposite materials. It covers the application of nanocomposite materials in the environmental and energy harvesting fields. The chapters explore the different techniques used for preparation and characterization of several types of nanocomposite materials for applications related to environmental and energy pathways. This book presents a panorama of current research in the field of nanocomposite structures for different applications, highlighting the advantages and disadvantages of using different types of nanocomposite in the design of different material products. The comprehensive chapters explain the interactions between the different components and the mechanisms related to applications in environmental pollution and energy shortage.

The results obtained in tests on the adsorption of carboxymethylcellulose, guar gum, and starch on layer silicates, salt-type minerals, oxides, and sulphides are discussed. It is shown that the interaction between the mineral and the substituent groups on the polymer are sufficiently low to permit adsorption due to the absence of electrostatic repulsion, adsorption can take place on all hydrophobic sites on the hydrophobic portion of the layer silicates. On hydrophilic minerals, polymer adsorption is characteristic of the polymer rather than of the composition of the hydrophilic solid. The presence of ionic species originating from the solid surface becomes apparent during measurement of the zeta potentials, and the effect of these ions on polymer adsorption can be estimated. Surface science and tribology play very critical roles in many industries. Manufacture and use of almost all consumer and industrial products rely on the application of advanced surface science knowledge. The fourth in a series, *Surfactants in Tribology, Volume 4* provides an update on research and development activities connecting surfactants and tribology.

Polymers in Mineral Processing

Chemistry, Biological Activities and Uses

Functional Fillers and Nanoscale Minerals

Next Generation Techniques and Applications

Polymeric Materials in Corrosion Inhibition

The Influence of Polymeric Depressants on the Adsorption of Thiol Collectors in Sulphide Flotation

Innovation in Nano-polysaccharides for Eco-sustainability: From Science to Industrial Applications presents fundamentals, advanced preparation methods, and novel applications for polysaccharide-based nanomaterials. Sections cover the fundamental aspects of polysaccharides and nano-polysaccharides, including their structure and properties, surface modification, processing and characterization. Key considerations are explained in detail, including the connection between the substituents of polysaccharides and their resulting physical properties, renewable resources, their sustainable utilization, and specific high value applications, such as pharmaceuticals, photocatalysts, energy, and wastewater treatment, and more. This is a valuable resource for researchers, scientists, and advanced students across bio-based polymers, nanomaterials, polymer chemistry, sustainable materials, biology, materials science and engineering, and chemical engineering. In industry, this book will support scientists, R&D, and engineers looking to utilize bio-based materials in advanced industrial applications. Covers the fundamentals, mechanisms, preparation methods, unique properties and performance of nano-polysaccharide materials. Explores sustainable applications of nano-polysaccharides in areas such as pharmaceuticals, energy and wastewater treatment. Addresses key challenges, including the implementation of sustainable concepts in chemical design and paths to scalability and commercialization.

Pulp and Paper Industry: Chemicals features in-depth and thorough coverage of Chemical additives in the Pulp and Paper Industry. It discusses use of Enzymes "Green Chemicals" that can improve operations in pulp and paper, describes Chemicals demanded by the end user and many key and niche players such as Akzo Nobel NV, Eka Chemicals AB, Ashland, Inc., BASF, Buckman Laboratories International, Inc., Clariant, Cytec Industries, Inc., Enzymatic Deinking Technologies, LLC, ERCO Worldwide, FMC Corporation, Georgia-Pacific Corporation, Georgia-Pacific Chemicals LLC, Imerys SA, Momentive Specialty Chemicals, Inc., Novozymes, Kemira Chemicals, Nalco Holding Company, Omya AG, Solvay AG, and Solvay Chemicals, Inc.. Paper and pulp processing and additive chemicals are an integral part of the total papermaking process from pulp slurry, through sheet formation, to effluent disposal. Environmental concerns, increased use of recycled waste paper as a replacement for virgin pulp, changes in bleaching and pulping processes, increased efficiency requirements for the papermaking process, limits on effluent discharge as well as international competitiveness have greatly impacted the paper and pulp chemical additive market. This book features in-depth and thorough coverage of Chemical additives in Pulp and Paper Industry. Detailed and up-to-date coverage of Chemicals in Pulp and Paper Industry. Authoritative, thorough, and comprehensive content on a wide variety of Enzymes "Green Chemicals".

Comprehensive list of Paper and Pulp Related Chemicals
Comprehensive list of all Pulp and paper Suppliers
Comprehensive Indexing

Polysaccharide Based Graft Copolymers

Biopolymer-Based Metal Nanoparticle Chemistry for Sustainable Applications

Nanomaterials in Chromatography

Advances in Nanocomposite Materials for Environmental and Energy Harvesting Applications

Recent Progress in Surface Science

Processing and Applications