Reagents In Mineral Technology Surfactant Science By P

Offering the latest research and developments in the understanding of surfactant behavior in solutions, this reference investigates the role and dynamics of surfactants and their solution properties in the formulation of paints, printing inks, paper coatings, pharmaceuticals, personal care products, cosmetics, liquid detergents, and lubricants. Exploring the science behind techniques from oil recovery to drug delivery, the book covers surfactant stabilized particles; solid particles at liquid interfaces; nanocapsules; aggregation behavior of surfactants; micellar catalysis; vesicles and liposomes; the clouding phenomena; viscoelasticity of micellar solutions; and more.

""Second Edition provides a thorough, up-to-date treatment of the fundamental behavior of surface active agents in solutions, their interaction with biological structures from proteins and membranes to the stratum corneum and epidermis, and their performance in formulations such as shampoos, dentifrice, aerosols, and skin cleansers.

This work presents a comprehensive survey of important anionic surfactants. It delineates current manufacturing technologies, methods of analysis, practical applications, environmental behaviour and the physicochemical and toxicological properties of surfactants and their related by-products. The uses of anionic surfactants in the cleaning, cosmetic, textile, leather, food, petroleum, metalworking and paper industries, are encompassed.

This work highlights the physical chemistry of surfactant solutions, detailing a fundamental method of selecting surfactants for agrochemical formulations and delineating how surfactants enhance the biological efficacy of agrochemicals. The unique properties of surfactants that have a major influence on the performance of an agrochemical are summarized.;The book is intended for physical, surface and colloid chemists; biochemists; microbiologists; agronomists; research and development personnel in the pesticide and fertilizer industries; and upper-level undergraduate and graduate students taking chemistry and chemical engineering courses.;College and university bookstores may order five or more copies at a special price which is available on request from Marcel Dekker Inc.

A discussion of the synthesis, problems, theories and applications of fluorinated surfactants, this second edition is updated with four new chapters on repellency and protection against soiling and staining and over 2900 references, equations, and drawings (800 more than the previous edition). It lists alphabetically and explores numerous applications of fluorinated surfactants. Called "...a most useful introduction to these fascinating materials" by the Journal of Dispersion Science and Technology and "...a coherent and stimulating handbook...the most useful book in the fluorinated surfactants field to date. Recommended." by the Journal of the Chemical Society, Faraday Transactions - this book is a source of factual data, methods of manufacture, and chemical structures for the surfactant scientist and user.

Focuses on copolymers made from sequential block polymerizations of ethylene oxide, propylene oxide and 1, 2-butylene oxide. This text presents the latest applications of polyoxyalkylene block copolymers in areas such as medicine, coal and petroleum, plastics, emulsion polymerization, paper, photography, personal care and cleaner systems. It offers in-depth coverage of the subject from synthesis and analysis to toxicology and environmental impact.

This work covers topics ranging from fundamental studies of solubilization to practical technological applications of the phenomenon. It reviews the solubilization of organic materials into surfactant aggregates, including micelles, vesicles and admicelles. The book also details methods of measuring solubilization that utilize both classical and newer instrumental techniques. It is intended for physical, surface, colloid and surfactant chemists; chemical, environmental and civil engineers; and upper-level undergraduate and graduate students in these disciplines.

Colloids are submicron particles that are ubiquitous in both natural and industrial products. Colloids and colloidal systems play a significant role in human health as well as commercial and industrial situations. Colloids have important applications in medicine, sewage disposal, water purification, mining, photography, electroplating, agriculture, and more.This book gathers recent research from experts in the field of colloids and discusses several aspects of colloid morphology, synthesis, and applications. The book is divided into three sections that cover different techniques for the synthesis of colloids, the structure, dynamic and stability of colloids, and applications of colloidal particles, respectively.

Holberg (materials and surface chemistry, Chalmers U. of Technology, Sweden) presents updated versions of the first edition's eleven chapters and includes six new chapters, mostly dealing with the concept of natural surfactants. Each chapter deals with a particular class of surfactant and is present.

"Presents the most comprehensive coverage available of the detection, isolation, identification, and estimation of all anionic surfactants in a wide variety of samples in trace and macro quantities. Features new chapters on volumetric and trace analysis, molecular and mass spectroscopy, and chromatographic processes."

Surfactants have been used for many industrial processes such as flotation, enhanced oil recovery, soil remediation and cleansing. Flotation technology itself has been used in industry since the end of the 19th century, and even today it is an important method for mineral processing and its application range is expanding to other areas. This technology has been used in the treatment of wastewater, industrial waste materials, separation and recycling of municipal waste, and some unit processes of chemical engineering. The efficiency of all these operations depends primarily on the interactions among surfactants, solids and media. In this book, the fundamentals of solution chemistry of mineral/surfactant systems are discussed, as well as the important calculations involved. The influence of relevant physico-chemical conditions are also presented in detail. * Introduces the fundamentals of solution chemistry of mineral/surfactant systems and important calculations involved * Discusses the influence of relevant physico-chemical conditions * Presents the relationship between the molecular structure of the flotation regents of solution chemistry and its characteristics

"This comprehensive guide illustrates the effects of dispersions in applications, the means necessary to achieve these effects with optical results, and how to overcome or avoid the difficulties encounteredemphasizing the dispersions of solid particles in liquid or solid media."

Interactions of Surfactants with Polymers and Proteins covers work done in this area over the last 30 years and examines in detail the physico-chemical, microstructural, and applications aspects of interactions of surfactants with polymers and proteins in bulk surfaces and at interfaces. The physical chemistry of individual components (surfactants, polymers, and proteins) is discussed, and extensive coverage of interactions of surfactants with uncharged, oppositely charged, and hydrophobe modified polymers is provided. Other topics addressed include water soluble and insoluble keratinous proteins, the principles and applications of fluorescence spectroscopy, the physical properties and microstructural aspects of polymer/protein-surfactant complexes, and implications of surfactant interactions with polymers and proteins in practical systems. Interactions of Surfactants with Polymers and Proteins provides a wealth of information for chemists involved in a number of different research areas, including cosmetics, pharmaceutics, foods, paints, pigments, lubrication, ceramics, minerals/materials processing, and biological

systems.
"Describes preparation techniques of protein-based surfactants (PBS) in the laboratory by a variety of chemical and enzymatic means, production by using different types of amino acids, and marketplace applications of PBS in medical and personal care products, detergents, cosmetics, antimicrobial agents, and foods."
This book is based on the proceedings of the conference "The role of surfactants in new and emerging technology". It examines the position of surfactants in the new growth areas, and describes the needs for surfactant research to facilitate advances in those areas.
A comprehensive review of surfactant systems in organic, inorganic, colloidal, surface, and materials chemistry. This text covers applications to reaction chemistry, organic and inorganic particle formation, synthesis and processing, molecular recognition and surfactant templating.
Touted as the new darling of the chemical industry, alkyl polyglycosides are gaining in popularity due to the fact that they are readily biodegradable, low-toxic, and made from renewable resources. Sugar-Based Surfactants compiles the most recent and relevant aspects of sugar-based surfactants, including self-association, phase behavior, and interfacial properties. Focusing on both colloidal and interfacial science, the book deals with the adsorption of surfactants in both the air-liquid and solid-liquid interfaces. It also covers new advances in surfactant science, such as the development of a family of potent surface active agents that are non-toxic, and thus usable in ubiquitous consumer products
"Provides comprehensive coverage of the synthesis, analysis, application, and chemical and physical properties of amphoteric surfactants--furnishing an up-to-date account of important new developments. Details the application of amphoteric surfactants in personal care products and household and industrial detergents."
Describes recent techniques applied to characterize surfactant systems, such as surfactant-stabilized colloids, micelles, microemulsions, emulsions and foams in both aqueous and nonaqueous fluids. The text probes adsorption and wetting phenomena at interfaces, including solid-liquid, liquid-vapour and liquid-liquid. It provides helpful examples and case studies illustrating how these techniques may be used in complementary ways.
Discusses the laboratory and industrial synthesis of nonionic surfactants. Furnishes exhaustive coverage of the most recent advances in nonionic surfactant organic chemistry. Analyzes a novel class of catalysts for the production of surfactants with highly narrow distributions.
This work describes the solubility, solution properties, thermodynamics, miscibility, solubilization, mesomorphic character and other physical properties of mixed surfactant systems - presenting both theoretical analysis and a wide range of practical applications. Equations clarify complex and abstract constructs.;The book also: treats mixed critical micelle concentrations, surface tension, flotation and absorption in terms of thermodynamic models; explores the miscibility of fluorocarbon and hydrocarbon surfactants in the micelles, covering micelle formation, liquid-liquid solubility and thermodynamics of mixed micellization; determines the mean aggregation number by steady-state quenching methods, and analyzes the composition of mixed micelles; discusses the mechanisms and experimental studies of adsorption from mixed surfactant systems; examines surface activity of surfactant mixtures, mixing phenomena and liquid crystal phase behaviour; and reviews means of investigation that use ion-specific electrodes, light scattering, and NMR and flourescence probing.
From anti-aging creams to make-up, surfactants play a key role as delivery systems for skin care and decorative cosmetic products. Surfactants in Personal Care Products and Decorative Cosmetics, Third Edition presents a scientific basis in surfactant science and recent advances in the industry necessary for understanding, formulating, and te
This work focuses on the environmental availability and effects, toxicological properties and numerous applications of cationic surfactants, detaling the modern analytical processes by which this important class of compounds may be studied. It discusses the types of microorganisms that are susceptible or refractory to the actions of cationic agents.
In the tradition of the popular first edition, Analysis of Surfactants, Second Edition offers a comprehensive and practical account of analysis methods for determining and understanding commercially important surfactants-individually and in compounds. Combining a complete review of the literature with a variety of evaluation procedures and the specifications for commercial products, this useful reference explores the key stages and latest developments for surfactant applications. This edition has been thoroughly expanded and features new sections on capillary electrophoresis, ether carboxylates, and ester quats. It is also more globally accessible with foreign language citations and SI units. Containing over 2400 references, drawings, tables, and equations, Analysis of Surfactants, Second Edition is an recommended reference for physical, surface, colloid, and oil chemists; analytical, research, and quality assurance chemists working in the soap and detergent, pharmaceuticals, and cosmetic industries; regulatory and food scientists; and upper-level undergraduate and graduate students in these disciplines.
The book offers a good summary of the field for all scientists who are interested in synthesis, properties, and the application of silicone surfactants." ---Molecular Chemistry and Physics. "Serves as a comprehensive introduction to the preparation, uses, and physical chemistry of silicone surfactants--focusing on silicone polyoxyalkylene copolymers that are surface active in both aqueous and nonaqueous systems. Covers applications in the manufacture of polyurethane foam, coatings, wetting agents, fabric finishes, and polymer surface modifiers."
Generating much interest in both academic and scientific circles, Gemini Surfactants gathers the most up-to-date research in gemini surfactantproduction and demonstrates how

their propertiesand performance can revolutionize the current industrial application of these surfactants. It surveys the state of special gemini surfactants, inc
Completely revised and expanded throughout, Mixed Surfactant Systems, Second Edition surveys the latest results, newest experimental perspectives, and theoretical investigations of properties, behavior, and techniques applicable to mixed surfactant systems. This important book elucidates core theoretical notions while summarizing results of cutting-edge studies in nanoscale phase separation at monolayers of mixed amphiphiles, nanocapsule preparation through mixtures of cationic and anionic polymer amphiphiles, and the photodegradation of mixed surfactant systems by titanium dioxide. The book provides new sections on topics including: Diffusion of mixed micelles Mixed micelles of fluorinated and conventional surfactants Sponge-like vesicles of mixed surfactants Liquid crystals of mixed surfactants Mixtures of surfactants and polymers Photolysis of mixed surfactants Reflecting the abundance of current and emerging applications in the field, Mixed Surfactant Systems, Second Edition compiles chapters written by world-renowned leaders in industry for an up-to-date scientific account of the dynamics of mixed surfactant systems, including physicochemical properties and behavior of surfactant mixtures in detergency and surfactant precipitation.
This volume seeks to advance cost-effective methods using newly-developed surfactants. It summarizes data from physical, chemical, surface, detergency, cleaning, toxicity and environmental sources for designing new formulations of classic organic head-tail surfactants in response to increased environmental, toxicity, safety and performance demands.
Discusses measuring the surface properties of flat or particulate solids with contact angles of drops of high-energy liquids deposited on solid surfaces or via the thin-layer wicking technique. It focuses on Lifshitz-van der Waals, Lewis acid-base, and electrical double layer interactions.
Reagents in Mineral Technology provides comprehensive coverage of both basic as well asapplied aspects of reagents utilized in the minerals industry.This outstanding, single-source reference opens with an explicit account of flotation fundamentals,including coverage of wetting phenomena, mineral/water interfacial phenomena, flo tationchemistry, and flocculation and dispersion of mineral suspensions.It then discusses flotation of sulfide and nonsulfide minerals, with attention to formation ofclithiolates, formation of metal thiol compounds, application of fatty acids, sulfosuccinic acids,amines, and other collectors.Reagents in Mineral Technology also reviews adsorption of surfactants on minerals .. .details adsorption of polymers .. . and considers the chemistry and application of chelation agentsin minerals separations.Additional chapters consider grinding aids, frothers, inorganic and polymeric depressants,dewatering and filtering aids, analytical techniques, and much more.Unique in its depth of coverage, Reagents in Mineral Technology will prove an invaluablereference for mineral engineers and processors; analytical, surface, colloid, and physical chemists;petroleum, petrochemical, metallurgical, and mining engineers; and for use in advancedundergraduate- and graduate-level courses in these and related fields.
Froth Flotation: A Century of Innovation comprehensively describes the state-of-the-art research and practice in mineral froth flotation as known and practiced a century after its introduction. Recognized experts from around the world provide in-depth coverage on the historical aspects of flotation; flotation fundamentals; flotation chemistry; flotation cells, modeling, and simulation; and flotation plant practice. This commemorative volume is an invaluable reference for industry professionals, researchers, and graduate students. It continues a distinguished series that began with Froth Flotation: 50th Anniversary Volume (1962) and the A.M. Gaudin Memorial Volume (1976). The enclosed CD supplements the book with presentations from the Centenary of Flotation Symposium managed by the Australasian Institute of Mining and Metallurgy.
This volume provides a comprehensive overview for recognizing and producing the characteristics of successful special surfactant agents. It highlights one of the most versatile and effective surface-active surfactant agents, detailing the synthesis and production, chemical properties and behaviours, and application for alkyl polyglucosides.
This publication provides comprehensive material on the chemical and physical attributes of surfactants and new models for the understanding of structure-property relationships.
Surfactants Chemistry, Interfacial Properties, Applications provides efficient instruments for the prognostication of principal physicochemical properties and the technologic applicability from the structure of a surfactant through the discussion of interrelations between the chemical structure, physicochemical properties and the efficiency of technologic application. Also included are informative overviews on new experimental techniques and abundant reference material on manufacturers, nomenclature, product properties, and experimental examples. The publication is accompanied by a CD-ROM, which is needed for the application of the thermodynamic and kinetic models to experimental data.
"Chronicles recent advances in our knowledge of polymer-surfactant systems, combining authoritative reviews of new experimental methods, instrumentation, and applications with fundamental discussions of classical methodologies and surveys of specific properties."
In response to intensifying interest on surfactant research brought on by recent innovation, Structure-Performance Relationships in Surfactants, Second Edition examines novel developments in our understanding of the properties and performance of surfactants at air-liquid, liquid-liquid, and solid-liquid interfaces, highlighting seven new chapters and carefully updated material to reflect current trends. This edition presents new material on the adsorption of vesicle-forming surfactants at the air-water interface, fluorinated surfactants having two hydrophobic chains, surface-active properties of telomer-type surfactants having several hydrocarbon chains, and the association behavior of amphiphilic dendritic polymers, among many other topics.
Surfactants by virtue of their structure form self-assembled organized structures that exhibit fascinating properties useful for a wide range of applications. This book is a compilation of chapters from leading experts highlighting the use of specific surfactants and their functional properties in new and emerging areas of science and technology. The first two chapters of this book discuss the various applications of surfactants, including their use in cosmetics, oil recovery from rocks and mineral processing. Subsequent

chapters cover advanced topics like new-generation polymer-based nanoparticles with microbial activity and complex phase systems formed as a result of charge-induced interactions between surfactants, polymers and proteins with potential applications in medical devices. In addition, this book reports for the first time on bio-surfactants extracted from micro-organisms present in the clouds. This report is not the only one of its kind, but it opens up a totally new area of research in terms of an unexplored source of bio-surfactants. It also paves the way for understanding their role in controlling our atmosphere and climate.

Within this volume is a thorough coverage of the fundamental principles embracing modern theories of colloid chemistry applied to mineral processing. It is written in respect for Dr. J.A. Kitchener, distinguished Reader in the Science of Mineral Processing in the Royal School of Mines, Imperial College, University of London (recently retired). Dr. Kitchener's expertise in colloid chemistry has led to numerous fundamental insights and practical advances in flotation, selective flocculation, and the treatment of slimes. Colloid chemistry is inevitably involved in all aspects of mineral processing, ranging from how collectors selectively adsorb on to mineral surfaces in flotation, to the forces which control the stability of dispersions of submicron particles, as well as embracing the behaviour of hydrolyzed metal ions in solid-water slurries. The intelligent use of this information is essential in the effective design of separation processes and strategies by the mineral processor. Up to date bibliographies are included at the end of each of the 13 chapters making this volume a useful general resource for researchers, students and mineral processors.