

The Preparation Of Dispersions In Liquids Surfactant Science

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[Biopolymers at Interfaces, Second Edition](#) - Martin Malmsten 2003-01-15
This new edition features research from nearly 60 of the profession's most distinguished international authorities. Recognizing emerging developments in biopolymer systems research with fully

updated and expanded chapters, the second edition discusses the biopolymer-based multilayer structures and their application in biosensors, the progress made in the understanding of protein behaviour at the air-water interface, experimental findings in ellipsometry and

reflectometry, and recent developments concerning protein interfacial behaviour in microfabricated total analysis systems and microarrays. With over 3000 references, this is an essential reference for professionals and students in surface, pharmaceutical, colloid, polymer, and medicinal chemistry; chemical, formulation, and application engineering; and pharmacy. Liquid Detergents - Kuo-Yann Lai 2005-08-23

A bestseller in its first edition, Liquid Detergents, Second Edition captures the most significant advances since 1996, maintaining its reputation as a first-stop reference in all fundamental theories, practical applications, and manufacturing aspects of liquid detergents. Featuring new material and updates in every chapter, the book expands its coverage of emulsions to include nanoemulsions, adds new data to elucidate the rheology of current commercial detergent raw materials as compared to finished products, and offers a

more complete theoretical treatment of the aggregation in non-aqueous solvents. The book now covers all rheology modifiers and thickeners for detergent applications, antibacterial and sensorial light-duty liquid products, color/fabric care and wrinkle reduction in heavy-duty liquid detergents, and household cleaning wipes in specialty liquid household surface cleaners. Rewriting the chapters on the latest improvements and growing benefits in fabric softeners, liquid hand soaps and body washes, and shampoos and conditioners, the latter contains extensive summaries of patents for various new products and technologies. The final chapter, dedicated to the manufacturing of liquid detergents, offers a discussion on continuous vs. batch processes and micro-contamination. The most comprehensive guide of its kind, Liquid Detergents, Second Edition, is a balanced and practical reference that will continue to inspire

students, researchers, chemists, and product developers in detergent industry, surfactant science and industrial chemistry.

Biomolecular Films - James F. Rusling 2003-02-26

This text examines films of biomolecules that can provide solid surfaces for catalyzing enzyme reactions, serve in biosensors and as biorecognition elements, mediate nanoparticle formation, and provide a basis for fundamental studies and applications in biomedicine and biomedical devices.

Chemical Properties of Material Surfaces - Marek Kosmulski 2001-07-18

A discussion of the adsorption of inorganics from aqueous solution on inorganic adsorbents. It emphasizes the relationship between adsorption and surface charging, highlighting simple and complex adsorption systems sorted by the adsorbent as well as the adsorbate. The author includes a comprehensive collection of pristine PZC of different

materials - covering crystallographic structure, methods of preparation, impurities in the solid, temperature and ionic composition of the solution, experimental methods to determine PZC, and the correlation between zero points and other physical quantities.

Interfacial Electrokinetics and Electrophoresis - Angel V. Delgado 2001-12-04

Interfacial Electrokinetics and Electrophoresis presents theoretical models and experimental procedures for the analysis of electrokinetic phenomena. It discusses the physics and chemistry of solid/liquid, liquid/liquid, and gas/liquid interfaces, and offers applications for the printing, environmental, pharmaceutical and biomedical industries.

Polymeric Surfactants - Tharwat F. Tadros 2017-05-08
Polymeric Surfactants covers the structure and stability origins of these highly useful surfactants. Adsorption and solution properties in emulsions are discussed based

on their underlying thermodynamics and kinetics. Research scientists and Ph.D. students investigating chemistry, chemical engineering and colloidal science will benefit from this text on polymeric surfactants and their value in preparation and stabilization of disperse systems.

Ferrofluids - Stefan Odenbach
2008-01-11

Magnetic control of the properties and the flow of liquids is a challenging field for basic research and for applications. This book is meant to be both an introduction to, and a state-of-the-art review of, this topic. Written in the form of a set of lectures and tutorial reviews, the book addresses the synthesis and characterization of magnetic fluids, their hydrodynamical description and their rheological properties. The book closes with an account of magnetic drug targeting.

Ionic Liquid-Based Surfactant Science - Bidyut K. Paul 2015-07-24

This volume will be summarized on the basis of the topics of Ionic Liquids in the form of chapters and sections. It would be emphasized on the synthesis of ILs of different types, and stabilization of amphiphilic self-assemblies in conventional and newly developed ILs to reveal formulation, physicochemical properties, microstructures, internal dynamics, thermodynamics as well as new possible applications. It covers: Topics of ionic liquid assisted micelles and microemulsions in relation to their fundamental characteristics and theories Development bio-ionic liquids or greener, environment-friendly solvents, and manifold interesting and promising applications of ionic liquid based micelles and microemulsions

Surfactants Applications Directory - D.R. Karsa
2012-12-06

Existing surfactants directories tend to focus on product identification by tradename, producer or chemical type, enabling the user only to

identify product equivalents and surfactant suppliers. Application information, where available, is usually scant or given as a footnote. This new directory approaches the identification of surfactants primarily from the applications standpoint. Hence the formulator or end-user can readily assess the products available for use in a particular industry sector and select materials giving the required surface active properties. For example, a formulator of agrochemicals for crop protection can turn to the section which refers to surfactants for use in the agrochemical industry and then easily identify a wetter/dispersant system for the production of water dispersible granules. Information is presented in an alternative format in the second part of the directory, which will help the user to identify swiftly products for a particular application by surface active properties. It is difficult, if not impossible, to identify an industry which does

not directly or indirectly utilise surfactants. Therefore it has proved necessary to simplify industry classifications to encompass a variety of uses under broader sector titles. The industry classifications adopted here have been used in many previous publications and papers, and define as accurately as possible the major industries and applications serviced by the surfactant industry. The editors have been particularly pleased with the support and response of the industry in the supply of data.

The Preparation of Dispersions in Liquids - H.N. Stein 2020-07-24

This work details the preparation of dispersions in liquids. It sets out to bridge the gap in information for the chemist who is not applications oriented and the chemical engineer who needs to solve problems in the field based on theoretical methods of dispersions of solids, liquids and gases. Insights are provided into many topics, including the transportation

and handling of finely divided soils or highly viscous liquids; the reactions between reactants dissolved in immiscible phases; the formation of porous materials; and filtration.

Handbook of Detergents - 6 Volume Set - Uri Zoller
2008-11-23

With contributions from experts and pioneers, this set provides readers with the tools they need to answer the need for sustainable development faced by the industry. The six volumes constitute a shift from the traditional, mostly theoretical focus of most resources to the practical application of advances in research and development.

With con

Formulation of Disperse Systems - Tharwat F. Tadros
2014-08-25

This book presents comprehensively the science and technology behind the formulation of disperse systems like emulsions, suspensions, foams and others. Starting with a general introduction, the book covers a broad range of

topics like the role of different classes of surfactants, stability of disperse systems, formulation of different dispersions, evaluation of formulations and many more. Many examples are included, too. Written by the experienced author and editor Tharwat Tadros, this book is indispensable for every scientist working in the field.

Applied Surfactants -

Tharwat F. Tadros 2006-03-06
While currently available titles either focus on the basics or on very specific subtopics, this text meets the need for a comprehensive survey of surfactants and their properties, with a strong emphasis on applications and their correlation to the fundamentals. The author covers their classification, physical properties, phase behavior, adsorption, effects - such as wetting, spreading and adhesion - as well as industrial applications in personal care and cosmetics, pharmaceuticals, agrochemicals and food products. Professor Tadros is a

well-known expert on the topic of surfactants, with much experience in colloid science. Here, he uses his industrial experience to close the gap between fundamentals of surfactants and their relevance and applications in practice.

Nonionic Surfactants - Vaughn Nace 2017-10-19

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.

The Preparation of Dispersions in Liquids - H.N. Stein 2020-07-24

This work details the preparation of dispersions in liquids. It sets out to bridge the gap in information for the

chemist who is not applications oriented and the chemical engineer who needs to solve problems in the field based on theoretical methods of dispersions of solids, liquids and gases. Insights are provided into many topics, including the transportation and handling of finely divided soils or highly viscous liquids; the reactions between reactants dissolved in immiscible phases; the formation of porous materials; and filtration.

Liquid Interfacial Systems - Rudolph V. Birikh 2003-06-17

Despite factoring in countless natural, biological, and industrial processes, fixed attention on the singular attributes and behavior of fluids near or at interfaces has not received enough attention in the surface science literature. Liquid Interfacial Systems assembles and analyzes concepts and findings as an inclusive summation of fluid-fluid interfacial phenomena. This book covers excitation, stabilization, and suppression of instability at

liquid interfaces. From the influential original research and scholarship of leaders in the discipline comes a volume to impart and explain definitions, scales, governing equations, and boundary conditions used in liquid interfacial system research. *Surfactants in Consumer Products* - Jürgen Falbe
2012-12-06

In today's market, custom formulated surfactants are offered for a wide range of applications. The need for surfactants in detergents, cleaning agents, cosmetics & toiletries is second only to an expanding demand in industrial applications. But even within the non-industrial areas the demands have undergone significant changes in recent years. For example, washing and cleaning temperatures have substantially decreased with increased energy conservation attitudes, and more stringent regulatory requirements in the area of ecology and toxicology are leading to new product profiles. New manufacturing

technologies and an increased utilization of natural raw materials also factor into this continuing evolution. These changes and trends have been described in numerous publications. However, a summary and survey of these developments is currently missing. The book presented here "Surfactants in Consumer Products" is intended to close this gap. The editor and authors dedicate this work to Dr. Dr. h.c. Konrad Henkel on the occasion of his 70th birthday. Dr. Henkel, himself a scientist and industrialist, contributed significantly to developments in the surfactant field. In the nineteen-fifties, he initiated the change from soap based detergents to synthetic detergents within Henkel. At the same time, dishwashing detergents utilizing various synthetic surfactants were also developed, and became the basis for modern manual and mechanical dishwashing.

**Liquid Interfaces In
Chemical, Biological And
Pharmaceutical Applications**
- Alexander G. Volkov

2001-01-30

Provides a comprehensive treatment of surface chemistry and its applications to chemical engineering, biology, and medicine. Focuses on the chemical and physical structure of oil-water interfaces and membrane surfaces. Details interfacial potentials, ion solvation, and electrostatic instabilities in double layers.

Fiber Electronics - Huisheng Peng 2020-12-14

This book highlights the main advances in fiber electronics, like fiber-shaped solar cells, batteries, supercapacitors, sensors, light-emitting devices, memristors and communication devices from the standpoints of material synthesis, structure design and property enhancement. It focuses on revealing the separation and transport mechanisms of charges, establishing transport equations for electrons and ions, and emphasizing integration methods in fiber devices. In closing, it reviews emerging applications based on fiber devices that could accelerate their large-scale

production in the near future.

Given its scope, the book offers a valuable resource for scientists, engineers, graduate students and undergraduate students in a wide variety of fields such as advanced materials, energy, electrochemistry, applied physics, nanoscience and nanotechnology, polymer science and engineering and biomedical science. It also benefits many non-specialist industrialists who are working to promote new technologies.

Proceedings of the ... Water-borne, Higher-solids, and Powder Coatings Symposium - 1996

An Introduction to Surfactants - Tharwat F.

Tadros 2014-04-01

Surfactants are surface active agents, molecules that have a significant role in emulsions, suspensions, and foams. They find widespread application in personal care, cosmetics, pharmaceuticals, agrochemicals and the food industry. The main objective of this graduate level textbook is

to present an overview of the classification, physical properties, phase behavior, their effects and applications of surfactants, e.g. as emulsifiers, foam stabilizer, in nano- and microemulsions and as wetting agents.

Basic Theory of Interfacial Phenomena and Colloid Stability

- Tharwat F. Tadros
2018-05-22

Volume 1 of Formulation Science and Technology is a survey of the theory of formulations in a variety of fields, as well as their rheological characterization. It offers in-depth explanations for research scientists, universities, and industry practitioners looking for a complete understanding of how different formulations behave and how to influence their performance.

Interfacial Phenomena and Colloid Stability

- Tharwat F. Tadros
2015-05-19

This fundamental book on interfacial phenomena forms the basis of application of interface and colloid science to various disperse systems.

These include suspensions, emulsions, nano-dispersions, wetting, spreading, deposition and adhesion of particles to surfaces. These systems occur in most industrial applications, such as personal care and cosmetic formulations, pharmaceutical systems particularly for controlled and targeted delivery of drugs, agrochemical formulations and enhancement of their biological performance, paints and coatings as well as most food formulations. These applications are described in volume 2. The text is very valuable for formulation chemists, chemical engineers and technologies who are involved in such applications. In addition this fundamental text is also valuable for research scientists and Ph.D. students investigating various aspects of interface and colloid science.

Novel Surfactants

- Krister Holmberg
2003-07-03
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.

Reactions And Synthesis In Surfactant Systems - John Texter 2001-06-26

This work offers a comprehensive review of surfactant systems in organic, inorganic, colloidal, surface, and materials chemistry. It provides practical applications to reaction chemistry, organic and inorganic particle formation, synthesis and processing, molecular recognition and surfactant templating. It also allows closer collaboration between synthetic and physical practitioners in developing new materials and devices.

Adsorption and Aggregation of Surfactants in Solution - K.L. Mittal 2002-11-07

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.

Colloidal Polymers - Abdelhamid Elaissari 2003-08-06

Amidst developments in nanotechnology and successes in catalytic emulsion polymerization of olefins, polymerization in dispersed media is arousing an increasing interest from both practical and fundamental points of view. This text describes ultramodern approaches to synthesis, preparation, characterization,

and functionalization of latexes, nanoparticles, and numerous additional colloidal polymer systems. In chapters contributed by leading international researchers, it communicates critical parameters for method selection, presents guidelines for controlling structural and colloid properties, presents recent results and information on polymer colloids, and describes other tools to assist in the production of desirable outcomes.

Surfactant Science and Technology - Drew Myers
2020-08-04

A solid introduction to the field of surfactant science, this new edition provides updated information about surfactant uses, structures, and preparation, as well as seven new chapters expanding on technology applications. Offers a comprehensive introduction and reference of the science and technology of surface active materials Elaborates, more fully than prior editions, aspects of surfactant crystal structure as well as their

effects on applications Adds more information on new classes and applications of natural surfactants in light of environmental consequences of surfactant use

Field-Flow Fractionation Handbook - Martin E. Schimpf
2000-08-02

Field flow fractionation (FFF) is an emerging separation technique, which has been proven successful in the analysis of pharmaceuticals, biotechnology products, polymers, soils, and foods, among others. In this book, Martin Schimpf joins forces with Karin Caldwell and J. Calvin Giddings, two of the primary developers of this technique, to bring you the first comprehensive, one-stop reference on the technique.

Interfacial Dynamics - Nikola Kallay
2000-01-03

An examination of the theoretical foundations of the kinetics and thermodynamics of solid-liquid interfaces, as well as state-of-the-art industrial applications, this book presents information on surface and colloidal chemical

processes and evaluates vital analytical tools such as atomic force microscopy, surface force apparatus measurements, and p

Analysis of Surfactants, Second Edition - Thomas M. Schmitt
2001-01-23

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. Surfactants - Bob Aveyard 2019
Characteristically, surfactants in aqueous solution adsorb at interfaces and form aggregates (micelles of various shapes and sizes, microemulsion droplets, and lyotropic liquid crystalline phases). This book is about the behaviour of surfactants in solution, at interfaces, and in colloidal dispersions. Adsorption at liquid/fluid and solid/liquid interfaces, and ways of characterizing the adsorbed surfactant films, are explained. Surfactant aggregation in systems containing only an aqueous phase and in systems with comparable volumes of water

and nonpolar oil are each considered. In the latter case, the surfactant distribution between oil and water and the behaviour of the resulting Winsor systems are central to surfactant science and to an understanding of the formation of emulsions and microemulsions. Surfactant layers on particle or droplet surfaces can confer stability on dispersions including emulsions, foams, and particulate dispersions. The stability is dependent on the surface forces between droplet or particle surfaces and the way in which they change with particle separation. Surface forces are also implicated in wetting processes and thin liquid film formation and stability. The rheology of adsorbed films on liquids and of bulk colloidal dispersions is covered in two chapters. Like surfactant molecules, small solid particles can adsorb at liquid/fluid interfaces and the final two chapters focus on particle adsorption, the behaviour of adsorbed particle films and the stabilization of

Pickering emulsions.--Provided by publisher.

Surfactants in Solution - K.L. Mittal 2013-03-08

This volume chronicles the proceedings of the 8th International Symposium on Surfactants in Solution (SIS) held in Gainesville, FL, June 10-15, 1990. This series of symposia have been smoothly running since 1976, but the appellation "Surfactants in Solution" was used for the first time in 1982 in Lund. Since then our logo "SIS" has become very familiar to everyone involved in surfactants. In Lund the meeting was billed as the Fourth International Symposium on Surfactants in Solution. Earlier three events were held under different rubrics, but proceedings of all these symposia, except the 7th SIS held in Ottawa in 1988, have been properly documented. As a matter of fact so far 10 volumes have appeared under the title "Surfactants in Solution". 1,2,3 The program for the 9th SIS was very comprehensive and many ramifications of

surfactants were covered, and it was a veritable international event. It contained a total of 384 papers by 869 authors from practically every corner of our planet. Just the sheer number of papers is a testimonial to the high tempo of research and tremendous interest in this wonderful class of materials. As in the past, there were plenary lectures (5), invited talks (37), oral presentations (195) and poster presentations (147). The plenary lectures were given by Prof. J. Th. G. Overbeek, Prof. C. A. Bunton, Prof. H. Ti Tien and Dr. J. Swalen. The lecture by Prof. Overbeek, the doyen of surface and colloid science, was a real treat.

Applied Surface Thermodynamics, Second Edition

- A.W. Neumann
2010-10-13

Surface thermodynamics forms the foundation of any meaningful study of capillarity and wetting phenomena. The second edition of Applied Surface Thermodynamics offers a comprehensive state-of-the-art treatment of this

critical topic. It provides students and researchers with fundamental knowledge and practical guidelines in solving real-world problems related to the measurement and interpretation of interfacial properties. Containing 40 percent new material and reorganized content, this second edition begins by presenting a generalized Gibbs theory of capillarity, including discussions of highly curved interfaces. Concentrating on drop-shape techniques, the book discusses liquid-fluid interfacial tension and its measurement. Next, the authors focus on contact angles with chapters on experimental procedures, thermodynamic models, and the interpretation of contact angles in terms of solid surface tension. The book discusses theoretical approaches to determining solid surface tension as well as interfacial tensions of particles and their manifestations. It concludes by discussing drop size dependence of contact angles and line tension. What's New in the Second Edition:

Recent progress in Axisymmetric Drop Shape Analysis (ADSA) Image processing methods for drop shape analysis Advanced applications and generalizations of ADSA Recent studies of contact angle hysteresis Contact angles on inert fluoropolymers Update on line tension and the drop size dependence of contact angles Exploring a range of different aspects of surface science and its applications, the book logically progresses so that knowledge of previous chapters enhances the understanding of subsequent material, yet each chapter is freestanding so that experienced researchers can quickly refer to topics of particular interest.

Mixed Surfactant Systems, Second Edition - Masahiko Abe 2004-12-22

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.

Delivery System Handbook for Personal Care and Cosmetic Products

- Meyer Rosen 2005-09-23

Novel delivery systems designed to facilitate the use of fountain of youth and other functional actives is an idea whose time has come. In a rapidly growing global market eager for products that really work, accelerating market pull forces and technology push have set the stage for this foundation text. This must have book has been carefully designed for training, development and synergistic technology transfer across the personal care, cosmetic and pharmaceutical industries. It is not only intended for scientists and technologists but will also be of high interest to market development and business personnel. This book will cause a breakthrough in effective interaction among technology and marketing. It is a showcase for understanding, using and

marketing the technology of why and how delivery systems work as well as current, emerging/potential applications and working formulations. Each chapter is written by one or more experts in the field. A wide range of companies serving the global marketplace are represented. These companies offer numerous types of delivery systems containing highly desirable functional actives, delivery system technology development services, and opportunities for technology licensing, mergers and acquisitions. A unique feature of the book is the use of Mind Map technology to capture and present the essence of the thinking of over 80 authors in a Book-at-a-Glance Executive Overview section. This section has been specifically designed to empower decision making leading to the development of innovative product differentiation in a global context.

Surfactants in Solution - Arun K. Chattopadhyay 2020-08-26
Contains selected invited

papers presented at the 10th International Symposium on Surfactants in Solution held in Caracas, Venezuela. The volume covers phase behaviour of monolayers, contact angle hysteresis, micellar relaxation, micellar catalyzed reactions, polymerization in microemulsions, polymer-surfactant complexation, asphaltenes, and more.

Structure-Performance

Relationships in Surfactants -

Kunio Esumi 2003-03-18

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.

Surfactant Science and Technology - Laurence S.

Romsted 2014-05-05

Surfactant research explores the forces responsible for surfactant assembly and the critical industrial, medical, and personal applications, including viscosity control, microelectronics, drug stabilization, drug delivery, cosmetics, enhanced oil recovery, and foods. Surfactant Science and Technology: Retrospects and Prospects, "a Festschrift in honor of Dr. Kash Mittal," provides a broad perspective with chapters contributed by leaders in the fields of surfactant-based physical, organic, and materials chemistries. Many of the authors participated in a special symposium in Melbourne, Australia, honoring Kash Mittal's 100th edited

book at the 18th Surfactants in Solution (SIS) meeting. Each chapter provides an overview of a specific research area, with discussions on past, present, and future directions. The book is divided into six parts. Part I reviews the evolution of theoretical models for surfactant self-assembly, and introduces a model for interpreting ion-specific effects on aggregate properties. Part II focuses on interactions of surfactant solutions with solid supports; uses contact angles to understand hydrophobic/hydrophilic changes in a lipid layer; uses surface tension to understand molecular arrangements at interfaces; reviews spreading phenomena; discusses pattern formation on solid surfaces; and applies tensiometry to probe flavor components of espresso. Part III discusses novel DNA-based materials, multifunctional poly(amino acid)s-based graft polymers for drug delivery, and polymeric surfactants for stabilizing suspensions and emulsions.

Part IV introduces farm-based biosurfactants from natural products and "greener" biosurfactants from bacteria. Part V explores lyotropic liquid crystals and their applications in triggered drug release; microemulsion properties and controlled drug release; the role of hydrotopes in formulations and in enhancing solubilization in liquid crystals; the potential of ionic liquids to generate tunable and selective reaction media; and provides an overview of stimuli-responsive surfactants. Focusing on emulsions, Part VI reviews the design of emulsion properties for various commercial applications, the role of surfactants in the oil and gas industries, and surfactant mechanisms for soil removal via microemulsions and emulsification.

Adsorption - Jozsef Toth
2002-05-10

Offers an overview of the recent theoretical and practical results achieved in gas-solid (G/S), liquid-solid (L/S), and gas-liquid (G/L) adsorption research.