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LYNN ALLIE

Encyclopedia of Emulsion Technology Royal Society of Chemistry Sustainable Separation Engineering Explore an insightful collection of resources exploring conventional and emerging materials and techniques for separations In Sustainable Separation Engineering: Materials, Techniques and Process Development, a team of distinguished chemical engineers delivers a comprehensive discussion of the latest trends in sustainable separation engineering. Designed to facilitate understanding and knowledge transfer between materials scientists and chemical engineers, the book is beneficial for scientists, practitioners, technologists, and industrial managers. Written from a sustainability perspective, the status and need for more emphasis on sustainable separations in the chemical engineering curriculum is highlighted. The accomplished editors have included contributions that explore a variety of conventional and emerging materials and techniques for efficient separations, as well as the prospects for the use of artificial intelligence in separation science and technology. Case studies round out the included material, discussing a broad range of separation applications, like battery recycling, carbon sequestration, and biofuel production. This edited volume also provides: Thorough introductions to green materials for sustainable separations, as well as advanced materials for sustainable oil and water separation Comprehensive explorations of the recycling of lithium batteries and ionic liquids for sustainable separation processes Practical discussions of carbon sequestration, the recycling of polymer materials, and AI for the development of separation materials and processes In-depth examinations of membranes for sustainable separations, green extraction processes, and adsorption processes for sustainable separations Perfect for academic and industrial researchers interested in the green and sustainable aspects of separation science, Sustainable Separation Engineering: Materials, Techniques and Process Development is an indispensable resource for chemical engineers, materials scientists, polymer scientists, and renewable energy professionals.

Liquid Membranes CRC Press

"Volume 4 of the Encyclopedia of Emulsion Technology completes this unique and compact 4-volume work by extending the discussion of basic theory and applications featured in Volumes 1-3. More importantly, this volume presents the latest developments on new applications in emulsion technology--introducing scientists and engineers to the most recent concepts. "

An Introduction to Food Grade Nanoemulsions Springer

Emulsions and Emulsion Stability, Second Edition provides comprehensive coverage of both theoretical and practical aspects of emulsions. The book presents fundamental concepts and processes in emulsified systems, such as flocculation, coalescence, stability, precipitation, deposition, and the evolution of droplet size distribution. The bo

Enzymatic Stabilization and Formation of Food Nano- and Microstructures Walter de Gruyter GmbH & Co KG

Emulsions: Structure, Stability and Interactions is the perfect handbook for scientists looking to obtain up-to-date knowledge about the fundamentals of emulsion science, and those looking to familiarize themselves with the subject in greater detail. As a ‘stand-alone’ source of information, it is also ideal for solving the practical issues encountered daily in the field of emulsion science. While each chapter presents a concise review on a specific topic, the book offers a consistent presentation of the important physical concepts relevant to emulsions. Some of the topics covered include statistical mechanics of fluid interfaces, the structure of fluid interfaces determined by neutron scattering, hydrodynamic interactions and stability of emulsion films, theory of emulsion flocculation, coalescence kinetics of Brownian emulsions, and Brownian dynamics simulation of emulsion stability. Full and comprehensive presentations Rigorous approach to each topic, providing in-depth information Acts as a 'stand-alone' source of information

Food Hydrocolloids □□□□□□□□□□□

Volume 2 of the Handbook of Colloid and Interface Science is a survey into the theory of dispersions in a variety of fields, as well as characterization by rheology. It is an ideal reference work for research scientists, universities, and industry practitioners looking for a complete understanding of how colloids and interfaces behave in the areas of materials science, chemical engineering, and colloidal science.

Handbook of Advanced Magnetic Materials Springer

Nanoemulsions: Formulation, Applications, and Characterization provides detailed information on the production, application and characterization of food nanoemulsion as presented by experts who share a wealth of experience. Those involved in the nutraceutical, pharmaceutical and cosmetic industries will find this a useful reference as it addresses findings related to different preparation and formulation methods of nanoemulsions and their application in different fields and products. As the last decade has seen a major shift from conventional emulsification processes towards nanoemulsions that both increase the efficiency and stability of emulsions and improve targeted drug and nutraceutical delivery, this book is a timely resource. Summarizes general aspects of food nanoemulsions and their formulation

Provides detailed information on the production, application, and characterization of food nanoemulsion Reveals the potential of nanoemulsions, as well as their novel applications in functional foods, nutraceutical products, delivery systems, and cosmetic formulations Explains preparation of nanoemulsions by both low- and high-energy methods

Natural Surfactants John Wiley & Sons

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.

Emulsions John Wiley & Sons

General introduction - Definition of nanodispersions (nanosuspensions, nanoemulsions, swollen micelles or microemulsions, liposomes and vesicles) and their size range. General description of their colloid stability. Main advantages of nanodispersions and their industrial applications. Preparation of nanosuspensions by top-up process - Nucleation and growth and control of particle size distribution. Factors determining the formation of narrow particle size distribution. Role of surfactants and polymers. Preparation of nano-polymer colloids (lattices) by emulsion and dispersion polymerization. Factors affects the stability of nanosuspensions. Preparation of nanosuspensions by bottom down process - Dispersion of preformed particles in liquids and the need of a wetting agent. Break-up of aggregates and agglomerates by application of high speed stirrers. Reduction of particle size by application of intense energy (microfluidization or bead milling). Maintenance of the colloid stability of the resulting particles. Reduction of Ostwald ripening. Industrial applications of nanosuspensions - Application in pharmacy to enhance bioavailability, Application in sunscreens for UV protection. Application in paints and coatings. Preparation of nanoemulsions by the use of high pressure homogenisers - Principles of emulsion formation and the role of the emulsifier. Selection of emulsifiers. Methods of emulsification and prevention of coalescence during emulsification. Origin of colloid stability of nanoemulsions. Prevention of Ostwald ripening Low energy methods for nanoemulsion preparation - The phase inversion composition method and the role of mixing the surfactant with oil and water. The phase inversion temperature method for preparation of nanoemulsions. Preparation of nanoemulsions by dilution of microemulsions. Practical examples of nanoemulsions and their industrial application - Nanoemulsions based on non-ionic surfactants and the role of the hydrophilic-lipophilic balance. Effect of oil solubility on the stabilityof nanoemulsions. Nanoemulsions based on polymeric surfactants. Applications in pharmacy and cosmetics. Swollen micelles or microemulsionsDefinition of microemulsions and their size range. Thermodynamic definition of microemulstions. Theories of microemulsion formation and stability. Characterisation of microemulsions using scattering, conductivity and NMR rechniques. Formulation of microemulsions and their industrial applications - Distinction between microemulsions and macroemulsions. Formulation of oil/water and water/oil microemulsions. Selection of emulsifiers for microemulsions. Application of microemulsions in tertiary oil recovery. Liposomes and vesicles - Formation of multilamellar lipid layers (liposomes) by dispersion of lipids in water. Formation of unilamellar vesicles by sonication of the liposomes. Factors responsible for stabilisation of liposomes and vesicles. Use of block copolymers to enhance the stability of vesicles. Applications of liposomes and vesicles in pharmacy and cosmetics.

Nanoemulsions Elsevier

"Volume 4 of the Encyclopedia of Emulsion Technology completes this unique and compact 4-volume work by extending the discussion of basic theory and applications featured in Volumes 1-3. More importantly, this volume presents the latest developments on new applications in emulsion technology--introducing scientists and engineers to the most recent concepts. "

Basic Principles of Dispersions John Wiley & Sons

Volume 3 of Formulation Science and Technology is a survey of the applications of formulations in a variety of fields, based on the theories presented in Volumes 1 and 2. It offers in-depth explanations and a wealth of real-world examples for research scientists, universities, and industry practitioners in the fields of Pharmaceuticals, Cosmetics and Personal Care.

Food Emulsions Walter de Gruyter GmbH & Co KG

Continuing the mission of the first two editions, Food Emulsions: Principles, Practices, and Techniques, Third Edition covers the fundamentals of emulsion science and demonstrates how this knowledge can be applied to control the appearance, stability, and texture of emulsion-based foods. Initially developed to fill the need for a single resource co

Flow Assurance Solids in Oil and Gas Production CRC Press

Up-to-date coverage of methods of emulsion polymerization This book provides a comprehensive reference on emulsion polymerization methods,focusing on the fundamental mechanisms and kinetics of each process, as well as howthey can be applied to the manufacture of environmentally friendly polymeric materials. Topics covered include: Conventional emulsion polymerization Miniemulsion polymerization Microemulsion polymerization Industrial emulsion polymerization processes (primarily the semibatch and continuous reactions systems) The role of various colloidal phenomena in emulsion polymerization Important end-use properties of emulsion polymer (latex) products Information on industrial applications in paints, coatings, adhesives, paper and board, and more This is a hands-on reference for graduate students and professionals in polymerchemistry, chemical engineering, and materials science who are involved in researchon coatings, adhesives, rubber, latex, paints, finishes, and other materials that can becreated using various methods of emulsion polymerization.

Encyclopedia of Colloid and Interface Science Springer Science & Business Media

It is now well recognised that the texture of foods is an important factor when consumers select particular foods. Food hydrocolloids have been widely used for controlling in various food products their viscoelasticity, emulsification, gelation, dispersion, thickening and many other functions. An international journal, FOOD HYDROCOLLOIDS, launched in 1986 has published a number of stimulating papers, and established an active forum for promoting the interaction between academics and industrialists and for combining basic scientific research with industrial development. Although there have been various research groups in many food processing areas in Japan, such as fish paste (kamaboko, surimi), soybean curd (tofu), agar jelly dessert, kuzu starch jelly, kimizu (Japanese style mayonnaise), their activities have been conducted in isolation of one another. The interaction

between the various research groups operating in the various sectors has been weak. Symposia on food hydrocolloids have been organised on several occasions in Japan since 1985. Professor Glyn O. Phillips, the Chief Executive Editor of FOOD HYDROCOLLOIDS, suggested to us that we should organise an international conference on food hydrocolloids. We discussed it on many occasions, and eventually decided to organise such a meeting, and extended the scope to include recent development in proteinaceous hydrocolloids, and their nutritional aspects, in addition to polysaccharides and emulsions.

Emulsion Science and Technology Walter de Gruyter GmbH & Co KG

Liquid Membranes: Principles and Applications in Chemical Separations and Wastewater Treatment discusses the principles and applications of the liquid membrane (LM) separation processes in organic and inorganic chemistry, analytical chemistry, biochemistry, biomedical engineering, gas separation, and wastewater treatment. It presents updated, useful, and systematized information on new LM separation technologies, along with new developments in the field. It provides an overview of LMs and LM processes, and it examines the mechanisms and kinetics of carrier-facilitated transport through LMs. It also discusses active transport, driven by oxidation-reduction, catalytic, and bioconversion reactions on the LM interfaces; modifications of supported LMs; bulk aqueous hybrid LM processes with water-soluble carriers; emulsion LMs and their applications; and progress in LM science and engineering. This book will be of value to students and young researchers who are new to separation science and technology, as well as to scientists and engineers involved in the research and development of separation technologies, LM separations, and membrane reactors. - Provides comprehensive knowledge-based information on the principles and applications of a variety of liquid membrane separation processes. - Contains a critical analysis of new technologies published in the last 15 years.

Surfactants Cambridge University Press

This book provides authentic and comprehensive information on the concepts, methods, functional details and applications of nano-emulsions. Following an introduction to the applications of nanotechnology in the development of foods, it elaborates on food-grade nano-emulsion and their significance, discusses various techniques and methods for producing food-grade nano-emulsion, and reviews the main ingredient and component of food-grade nano-emulsions. Further, the book includes a critical review of the engineering aspect of fabricating food-grade nano-emulsions and describe recently developed vitamin encapsulated nano-systems. In closing, it discuss the challenges and opportunities of characterizing nano-emulsified systems, the market risks and opportunities of nano-emulsified foods, and packaging techniques and safety issues – including risk identification and risk management – for nano-foods. The book offers a unique guide for scientists and researchers working in this field. It will also help researchers, policymakers, industry personnel, journalists and the general public to understand food nanotechnology in great detail.

Science and Technology Behind Nanoemulsions Elsevier

This book focuses on the use of natural surfactants in enhanced oil recovery, providing an overview of surfactants, their types, and different physical–chemical properties used to analyse the efficiency of surfactants. Natural surfactants discuss the history of the surfactants, their classification, and the use of surfactants in petroleum industry. Special attention has been paid to natural surfactants and their advantages over synthetic surfactants, including analysing their properties such as emulsification, interfacial tension, and wettability and how these can be used in EOR. This book offers an overview for researchers and graduate students in the fields of petroleum and chemical engineering, as well as oil and gas industry professionals.

Nanodispersions CRC Press

Highlighting recent developments as well as future challenges, this book covers a wealth of topics from Stabilization of Emulsions to Nanocomposites to Sensory Properties of Cosmetic Emulsions.

Principles and Applications of Emulsion Polymerization Springer

Foams and froths are an important feature of everyday life; one only has to think of shaving foam, foam upholstery, fire fighting foam, bread, bear head, and ice cream. Less obvious but equally important are the foams and foaming processes which are being exploited in ever more complex and imaginative ways in industry. However, the unusual nature of foams, the fact that they are neither solids or liquids, and their very fragility has prevented scientists from obtaining a thorough understanding of even the basic principles of foam formation and stability. This volume presents papers on the physics, chemistry, structure and ultrastructure of foams by contributors from a wide range of backgrounds and research disciplines. The aim of the book is to present a unique multi-disciplinary cross section of work currently being undertaken on the subject of foams.

Emulsions Springer Nature

The importance of emulsification techniques, their use in the production of nanoparticles for biomedical applications as well as application of rheological techniques for studying the interaction between the emulsion droplets is gathered in this reference work. Written by some of the top scientists within their respective fields, this book covers such topics as emulsions, nano-emulsions, nano-dispersions and novel techniques for their investigation. It also considers the fundamental approach in areas such as controlled release, drug delivery and various applications of nanotechnology.

Nanoemulsions BoD – Books on Demand

There has been much scientific interest in the behaviour of colloidal particles at liquid interfaces. From a research aspect they provide model systems for fundamental studies of condensed matter physics. From a commercial aspect they provide applications for making new materials in the cosmetics, food and paint industries. In many cases of colloidal particles at interfaces, the mechanism of particle interactions is still unknown. Particle-Stabilized Emulsions and Colloids looks at recent studies on the behaviour of particles at liquid interfaces. The book first introduces the basic concepts and principles of colloidal particles at liquid-liquid interfaces including the interactions and conformations. The book then discusses the latest advances in emulsions and bicontinuous emulsions stabilized by both solid and soft particles and finally the book covers applications in food science and oil extraction. With contributions from leading experts in these fields, this book will provide a background to academic researchers, engineers, and graduate students in chemistry, physics and materials science. The commercial aspects will also be of interest to those working in the cosmetics, food and oil industry.