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STOKES AUBREE

Encapsulations Springer Nature
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
Materials, Techniques and Process Development Walter de Gruyter GmbH & Co KG
This singular text aims to strengthen the scientific understanding of food product design and engineering, and to stimulate and accelerate the development of innovative, complex and highly structured products and suitable production processes. By gathering an interdisciplinary team of scientists from the research areas of food engineering, biophysics, applied soft matter, food technology and applied human nutrition, this book contributes to an integrated process and product design approach for creating innovative, multi-phase structured foods delivering functionality. Delivering functionality in foods: from structure design to product engineering serves as an important reference for food engineers, food technologists and nutritionists, covering all aspects of the design of food structures and their application in the development of functional food products. From the delivery of health-related functionalities to process and product engineering for delivery of multiple food properties, this work provides a comprehensive overview of the knowledge, processes and technologies required for the design of functional foods.
Surfactant Science Series/61 CRC Press
Differential Scanning Calorimetry: Applications in Fat and Oil Technology provides a complete summary of the scientific literature about differential scanning calorimetry (DSC), a well-known thermo-analytical technique that currently has a large set of applications covering several aspects of lipid technology. The book is divided into three major sections. The first section covers the applications of DSC to study cooling and heating profiles of the main source of oils and fats. The second is more theoretical, discussing the application of DSC coupled to related thermal techniques and other physical measurements. And the third covers specific applications of DSC in the field of quality evaluation of palm, palm kernel, and coconut oils and their fractions as well as of some other important aspects of lipid technology such as shortening and margarine functionality, chocolate technology, and food emulsion stability. This book is a helpful resource for academicians, food scientists, food engineers and technologists, food industry operators, government researchers, and regulatory agencies.
EmulsionsFormation, Stability, Industrial Applications
A discussion of fundamental characteristics, theories and applications for liquid-liquid colloidal dispersions. It profiles experimental and traditional measurement techniques in a variety of emulsified systems, including rheology, nuclear magnetic resonance, dielectric spectroscopy, microcalorimetry, video enhanced microscopy, and conductivity.
Food Emulsions CRC Press
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.
Science and Technology Behind Nanoemulsions BoD – Books on Demand
The need for the development of biomaterials as scaffold for tissue regeneration is driven by the increasing demands for materials that mimic functions of extracellular matrices of body tissues. Unfolding the Biopolymer Landscape provides a unique account of “biopolymeric interventions” inherent to biotechnological applications, soft tissue engineering, ophthalmic drug delivery, biotextiles, environmentally responsive systems, neurotherapeutics, and emulsions-based formulations for food and pharmaceutical applications. Chapters in this volume also cover biomedical applications and implications of cationic polymers, collagen-based substrates, multifunctional polymers, shape memory biopolymers, hybrid semisynthetic biomaterials, microbial exopolysaccharides, biomaterials mimicking the extracellular microenvironment, derivatized polysaccharides, and metallic biomaterials. Each chapter is distinctly written by experts in the respective fields and emphasis is given on the mechanistic profile of the performance of biopolymers and biomedical applications. This book provides both basic and advanced biopolymer information for scientific experts and early career researchers in the field of drug delivery, tissue engineering, nanomedicine, food technology, peptide science, biomaterial design, and nutrition. This volume provides a unique account of “biopolymeric interventions” inherent to biotechnological

applications, soft tissue engineering, ophthalmic drug delivery, biotextiles, environmentally responsive systems, neurotherapeutics, and emulsions-based formulations for food and pharmaceutical applications.

Food Emulsifiers and Their Applications World Scientific
Emulsifiers, also known as surfactants, are often added to processed foods to improve stability, texture, or shelf life. These additives are regulated by national agencies, such as the FDA, or multi-national authorities, such as the EEC or WHO. The amphiphilic molecules function by assisting the dispersion of mutually insoluble phases and stabilizing the resulting colloids, emulsions, and foams. Emulsifiers can interact with other food components such as carbohydrates, proteins, water, and ions to produce complexes and mesophases. These interactions may enhance or disrupt structures and affect functional properties of finished foods. In dairy processing, small molecule emulsifiers may displace dairy proteins from oil/water and air/water interfaces, which affects stability and properties of the foams and emulsions. In baked products, emulsifiers contribute to secondary functionalities, such as dough strengthening and anti-staling. Synthetic food emulsifiers suffer from the stigma of chemical names on a product's ingredient statement. Modern consumers are seeking products that are "all natural." Fortunately, there are a number of natural ingredients that are surface-active, such as lecithin, milk proteins, and some protein-containing hydrocolloids. Mayonnaise, for example, is stabilized by egg yolk. This book can serve as both a guide for professionals in the food industry to provide an understanding of emulsifier functionality, and a stimulus for further innovation. Students of food science will find this to be a valuable resource.

Applications in Fat and Oil Technology John Wiley & Sons
Reservoir Formation Damage, Third Edition, provides the latest information on the economic problems that can occur during various phases of oil and gas recovery from subsurface reservoirs, including production, drilling, hydraulic fracturing, and workover operations. The text helps readers better understand the processes causing formation damage and the factors that can lead to reduced flow efficiency in near-wellbore formation during the various phases of oil and gas production. The third edition in the series provides the most all-encompassing volume to date, adding new material on conformance and water control, hydraulic fracturing, special procedures for unconventional reservoirs, field applications design, and cost assessment for damage control measures and strategies. Understand relevant formation damage processes by laboratory and field testing Develop theories and mathematical expressions for description of the fundamental mechanisms and processes Predict and simulate the consequences and scenarios of the various types of formation damage processes encountered in petroleum reservoirs Develop methodologies and optimal strategies for formation damage control and remediation

Formation and Applications John Wiley & Sons
The chemistry and physico-chemical properties of milk proteins are perhaps the largest and most rapidly evolving major areas in dairy chemistry. Advanced Dairy Chemistry-1B: Proteins: Applied Aspects covers the applied, technologically-focused chemical aspects of dairy proteins, the most commercially valuable constituents of milk. This fourth edition contains most chapters in the third edition on applied aspects of dairy proteins. The original chapter on production and utilization of functional milk proteins has been split into two new chapters focusing on casein- and whey-based ingredients separately by new authors. The chapters on denaturation, aggregation and gelation of whey proteins (Chapter 6), heat stability of milk (Chapter 7) and protein stability in sterilised milk (Chapter 10) have been revised and expanded considerably by new authors and new chapters have been included on rehydration properties of dairy protein powders (Chapter 4) and sensory properties of dairy protein ingredients (Chapter 8). This authoritative work describes current knowledge on the applied and technologically-focused chemistry and physico-chemical aspects of milk proteins and will be very valuable to dairy scientists, chemists, technologists and others working in dairy research or in the dairy industry.

Principles, Practices, and Techniques, Third Edition Springer
Emulsions, the third volume of the Nanotechnology in the Food Industry series, is an invaluable resource for anyone in the food industry who needs the most recent information about scientific advances in nanotechnology on this topic. This volume focuses on basic and advanced knowledge about nanoemulsion, and presents an overview of the production methods, materials (solvents, emulsifiers, and functional ingredients), and current analytical techniques that can be used for the identification and characterization of nanoemulsions. The book also discusses the applications of nanoemulsion with special emphasis on systems suitable for utilization within the food industry. This book is useful to a wide audience of food science research professionals and students who are doing research in this field, as well as others interested in recent nanotechnological progress worldwide. Presents fundamentals of nanoemulsions, methods of preparation (high-energy and low-energy techniques), and applications in the food industry Includes research studies of nanoemulsification technology to improve bioavailability of food ingredients and research analysis Offers benefits and methods of risk assessment to ensure food safety Presents cutting-edge encapsulating systems to improve the quality of functional compounds Provides a variety of methods, such as high-shear stirring, high-pressure homogenizers, self-emulsification, phase transitions and phase-inversion, to further research in this field

Sustainable Separation Engineering CRC Press
A comprehensive text that offers a review of the delivery of food active compounds through emulsion-based systems Emulsion-based Systems for Delivery of Food Active Compounds is a comprehensive recourse that reviews the principles of emulsion-based systems formation, examines their characterization and explores their effective application as carriers for delivery of food active ingredients. The text also includes information on emulsion-based systems in regards to digestibility and health and safety challenges for use in food systems. Each chapter reviews specific emulsion-based systems (Pickering, multiple, multilayered, solid lipid nanoparticles, nanostructured lipid carriers and more) and explains their application for delivery of food active compounds used in food systems. In addition, the authors – noted experts in the field – review the biological fate, bioavailability and the health and safety challenges of using emulsion-based systems as carriers for delivery of food active compounds in food systems. This important resource: Offers a comprehensive text that includes detailed coverage of emulsion-based systems for the delivery of food active compounds Presents the most recent development in emulsion-based systems that are among the most widely-used delivery systems developed to control the release of food active compounds Includes a guide for industrial applications for example food and drug delivery is a key concern for the food and pharmaceutical industries Emulsion-

based Systems for Delivery of Food Active Compounds is designed for food scientists as well as those working in the food, nutraceutical and pharmaceutical and beverage industries. The text offers a comprehensive review of the essential elements of emulsion-based systems for delivery of food active compounds.
Emulsion Formation and Stability Walter de Gruyter GmbH & Co KG
The CRC Concise Encyclopedia of Nanotechnology sets the standard against which all other references of this nature are measured. As such, it is a major resource for both skilled professionals and novices to nanotechnology.The book examines the design, application, and utilization of devices, techniques, and technologies critical to research at the
Reservoir Formation Damage Springer
Emulsions occur either as end products or during the processing of products in a huge range of areas including the food, agrochemical, pharmaceutical, paint and oil industries. Despite over one hundred years of research in the subject, however, a quantitative understanding of emulsions has been lacking. Modern Aspects of Emulsion Science presents a comprehensive description of both the scientific principles in the field and the very latest advances in research in this important area of surface and colloid science. Topics covered include emulsion formation, type, stability (creaming, flocculation, ripening, coalescence), monodisperse and gel emulsions, and applications. Emphasis has been placed on relating the chemistry of the surfactant or protein adsorbed at the oil-water interface to the principles of the physics involved in the bulk emulsion property. The book has been written by a collection of the world's leading experts in the field, and covers both experimental and theoretical approaches. Modern Aspects of Emulsion Science fills a real gap in the market, being the only book of its kind in print. As such it will prove essential reading for graduates and researchers in this subject, in both academia and industry.
Enzymatic Stabilization and Formation of Food Nano- and Microstructures Academic Press
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.
Volume 1B: Proteins: Applied Aspects Royal Society of Chemistry
Until now colloid science books have either been theoretical, or focused on specific types of dispersion, or on specific applications. This then is the first book to provide an integrated introduction to the nature, formation and occurrence, stability, propagation, and uses of the most common types of colloidal dispersion in the process-related industries. The primary focus is on the applications of the principles, paying attention to practical processes and problems. This is done both as part of the treatment of the fundamentals, where appropriate, and also in the separate sections devoted to specific kinds of industries. Throughout, the treatment is integrated, with the principles of colloid and interface science common to each dispersion type presented for each major physical property class, followed by separate treatments of features unique to emulsions, foams, or suspensions. The first half of the book introduces the fundamental principles, introducing readers to suspension formation and stability, characterization, and flow properties, emphasizing practical aspects throughout. The following chapters discuss a wide range of industrial applications and examples, serving to emphasize the different methodologies that have been successfully applied. Overall, the book shows how to approach making emulsions, foams, and suspensions with different useful properties, how to propagate them, and how to prevent their formation or destabilize them if necessary. The author assumes no prior knowledge of colloid chemistry and, with its glossary of key terms, complete cross-referencing and indexing, this is a must-have for graduate and professional scientists and engineers who may encounter or use emulsions, foams, or suspensions, or combinations thereof, whether in process design, industrial production, or in related R&D fields.
Emulsions and Emulsion Stability John Wiley & Sons
The latest volume in the successful Special Publication Series captures the most recent research findings in the field of food hydrocolloids. The impressive list of contributions from international experts includes topics such as: * Hydrocolloids as dietary fibre * The role of hydrocolloids in controlling the microstructure of foods * The characterisation of hydrocolloids * Rheological properties * The influence of hydrocolloids on emulsion stability * Low moisture systems * Applications of hydrocolloids in food products Gums and Stabilisers for the Food Industry 12, with its wide breadth of coverage, will be of great value to all who research, produce, process or use hydrocolloids, both in industry and academia.
Basic Principles of Formulation Types Logos Verlag Berlin GmbH
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.
From Structure Design to Product Engineering Springer Nature
Emulsions occur either as end products or during the processing of products in a huge range of areas including the food, agrochemical, pharmaceuticals, paints and oil industries. As end products, emulsions allow to avoid organic solvent in processing hydrophobic coatings. Emulsion technology is a suitable approach to vehicle viscous phases. It is also a remarkable mean of targeting actives or capturing specific species. The range of applications of emulsions progresses and their manufacturing becomes more and more sophisticated. Besides this broad

domain of technological interest, emulsions are raising a variety of fundamental questions at the frontier between physic and chem istry. Indeed, as a class of soft colloidal materials, emulsions science is linked to various aspects of these disciplines: phase transitions, surface forces and wetting, metastability and hydrodynamic instabilities, mechanical properties and flow. The aim of this book is to review the main important concepts governing emulsion science. In Chapter 2, repulsive interactions between liquid films are discussed as well as adhesive interaction related to wetting. In Chap ter 3, consequences of weak and strong attractions are presented, related to the well accepted liquid solid transition analogy. In Chapter 4, the basics of both bulk compressibility and shear elasticity are presented, the role of disorder being the most important aspect of the elastic behavior of these soft systems. In Chapter 5 the central question of the emulsion lifetime related to metastability is discussed.

Formation, Application, Health and Safety 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

Emulsion-based Systems for Delivery of Food Active Compounds CRC Press

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.