Solutions And Suspensions

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Foams and Emulsions CRC Press
This book covers the physical side of colloidal science from the individual forces acting between particles smaller than a micrometer that are suspended in a liquid, through the resulting equilibrium and dynamic properties. A variety of internal forces both attractive and repulsive act in conjunction with Brownian motion and the balance between them all decides the phase behaviour. On top of this various external fields, such as gravity or electromagnetic fields, diffusion and non-Newtonian rheology produce complex effects, each of which is of important scientific and technological interest. The authors aim to impart a sound, quantitative understanding based on fundamental theory and experiments with well-characterised model systems. This broad grasp of the fundamentals lends insight and helps to develop the intuitive sense needed to isolate essential features of the technological problems and design critical experiments. The main prerequisites for understanding the book are basic fluid mechanics, statistical mechanics and electromagnetism, though self contained reviews of each subject are provided at appropriate points. Some facility with differential equations is also necessary. Exercises are included at the end of each chapter, making the work suitable as a textbook for graduate courses in chemical engineering or applied mathematics. It will also be useful as a reference for individuals in academia or industry undertaking research in colloid science.

An Introduction to Dynamics of Colloids Pragati Books Pvt. Ltd.
Counsels parents and educators on how to best safeguard the interests of children with behavioral, emotional, and social challenges, in a guide that identifies the misunderstandings and practices that are contributing to a growing number of student failures.

Paper Trade Journal John Wiley & Sons
Suspension Concentrates is a survey into the theory of the formulation and stabilization of suspensions, elaborating on the breaking of aggregates and agglomerates and the role of dispersing agents on flocculation and electrostatic and steric

stabilization. Practical analysis by rheology is discussed. Suspension Concentrates is ideal for research scientists and Ph.D. students investigating chemistry, chemical engineering and colloidal science.

Rheology of Non-spherical Particle Suspensions Springer Science & Business Media

From the basics to the most recent developments- A concise review of suspensions, emulsions, and foams Updating and expanding their highly popular Colloidal Systems and Interfaces, Ian Morrison and Sydney Ross now provide authoritative coverage of the concepts and techniques applicable to suspensions, emulsions, and foams. Concisely yet thoroughly encompassing the significant developments of the past fourteen years, Colloidal Dispersions: Suspensions, Emulsions, and Foams describes a wide range of topics, including particles in liquids, interactions at interfaces, surfactants, and the technology of emulsions and foams. Industrial chemists and chemical engineers will discover among the book's insights recently developed computer-based methods that offer fast, precise measurements of particle concentration, size, and charge by acoustics, application of acid-base concepts to adsorption, the role of electric charges in nonpolar media, and the fundamentals of nanotechnology. This new edition includes: * Updated material and major advances in the field, including the development of new equipment * In-depth instruction on methods for producing emulsions and suspensions * Extensive industrial and practical applications of general principles * Expanded sections on particle sizing, nonpolar dispersions, and polymer stabilization

Sucrose Cambridge University Press

Presented in an accessible and introductory manner, this is the first book devoted to the comprehensive study of colloidal suspensions.

Processing of Solid–Liquid Suspensions SAE International

The suspension dosage form has long been used for poorly soluble active ingre- ents for various therapeutic indications. Development of stable suspensions over the shelf life of the drug product continues to be a challenge on many fronts. A good understanding of the fundamentals of disperse systems is essential in the development of a suitable pharmaceutical suspension. The development of a s- pension dosage form follows a very complicated path. The selection of the proper excipients (surfactants, viscosity imparting agents etc.) is important. The particle size distribution in the finished drug product dosage form is a critical parameter that significantly impacts the bioavailability and pharmacokinetics of the product. Appropriate analytical methodologies and instruments (chromatographs, visco- ters, particle size analyzers, etc.) must be utilized to properly characterize the s- pension formulation. The development process continues with a successful scale-up of the manufacturing process. Regulatory agencies around the world require cli- cal trials to establish the safety and efficacy of the drug product. All of this devel- ment work should culminate into a regulatory filing in accordance with the regulatory guidelines. Pharmaceutical Suspensions, From Formulation Development to Manufacturing, in its organization, follows the development approach used widely in the pharmaceutical industry. The primary focus of this book is on the classical disperse system – poorly soluble active pharmaceutical ingredients s- pended in a suitable vehicle.

Pharmaceutics - I Cambridge University Press

Semi-Active Suspension Control Design for Vehicles presents a comprehensive discussion of designing control algorithms for semi-active suspensions. It also covers performance analysis and control design. The book evaluates approaches to different control theories, and it includes methods needed for analyzing and evaluating suspension performances, while

identifying optimal performance bounds. The structure of the book follows a classical path of control-system design; it discusses the actuator or the variable-damping shock absorber, models and technologies. It also models and discusses the vehicle that is equipped with semi-active dampers, and the control algorithms. The text can be viewed at three different levels: tutorial for novices and students; application-oriented for engineers and practitioners; and methodology-oriented for researchers. The book is divided into two parts. The first part includes chapters 2 to 6, in which fundamentals of modeling and semi-active control design are discussed. The second part includes chapters 6 to 8, which cover research-oriented solutions and case studies. The text is a comprehensive reference book for research engineers working on ground vehicle systems; automotive and design engineers working on suspension systems; control engineers; and graduate students in control theory and ground vehicle systems. - Appropriate as a tutorial for students in automotive systems, an application-oriented reference for engineers, and a control design-oriented text for researchers that introduces semi-active suspension theory and practice - Includes explanations of two innovative semi-active suspension strategies to enhance either comfort or road-holding performance, with complete analyses of both - Also features a case study showing complete implementation of all the presented strategies and summary descriptions of classical control algorithms for controlled dampers

Fundamentals of General, Organic, and Biological Chemistry Prentice Hall

A needed resource for pharmaceutical scientists and cosmetic chemists, Essential Chemistry for Formulators of Semisolid and Liquid Dosages provides insight into the basic chemistry of mixing different phases and test methods for the stability study of nonsolid formulations. The book covers foundational surface/colloid chemistry, which forms the necessary background for making emulsions, suspensions, solutions, and nano drug delivery systems, and the chemistry of mixing, which is critical for further formulation of drug delivery systems into semisolid (gels, creams, lotions, and ointments) or liquid final dosages. Expanding on these foundational principles, this useful guide explores stability testing methods, such as particle size, rheological/viscosity, microscopy, and chemical, and closes with a valuable discussion of regulatory issues. Essential Chemistry for Formulators of Semisolid and Liquid Dosages offers scientists and students the foundation and practical guidance to make and analyze semisolid and liquid formulations. - Unique coverage of the underlying chemistry that makes possible stable dosages - Quality content written by experienced experts from the drug development industry - Valuable information for academic and industrial scientists developing topical and liquid dosage formulations for pharmaceutical as well as skin care and cosmetic products

Colloidal Dispersions Elsevier

The submersed cultivation of organisms in sterile containments or fermenters has become the standard manufacturing procedure, and will remain the gold standard for some time to come. This book thus addresses submersed cell culture and fermentation and its importance for the manufacturing industry. It goes beyond expression systems and integrally investigates all those factors relevant for manufacturing using suspension cultures. In so doing, the contributions cover all industrial cultivation methods in a comprehensive and comparative manner, with most of the authors coming from the industry itself. Depending on the maturity of the technology, the chapters address in turn the expression system, basic process design, key factors affecting process economics, plant and bioreactor design, and regulatory aspects.

Suspension Concentrates John Wiley & Sons
PRINCIPLES OF MODERN CHEMISTRY has dominated the honors and high mainstream general chemistry courses and is considered the standard for the course. The fifth edition is a substantial revision that maintains the rigor of previous editions but reflects the exciting modern developments taking place in chemistry today. Authors David W. Oxtoby and H. P. Gillis provide a unique approach to learning chemical principles that emphasizes the total scientific process'from observation to application'placing general chemistry into a complete perspective for serious-minded science and engineering students. Chemical principles are illustrated by the use of modern materials, comparable to equipment found in the scientific industry. Students are therefore exposed to chemistry and its applications beyond the classroom. This text is perfect for those instructors who are looking for a more advanced general chemistry textbook.

Chemistry Class 12 Laxmi Publications
This general, organic, and biochemistry text has been written for students preparing for careers in health-related fields such as nursing, dental hygiene, nutrition, medical technology, and occupational therapy. It is also suited for students majoring in other fields where it is important to have an understanding of the basics of chemistry. Students need have no previous background in chemistry, but should possess basic math skills. The text features numerous helpful problems and learning features.

Nucleation Theory and Applications Walter de Gruyter GmbH & Co KG
This book provides a review of the current understanding of the behavior of non-spherical particle suspensions providing experimental results, rheological models and numerical modeling. In recent years, new models have been developed for suspension rheology and as a result applications for nanocomposites have increased. The authors tackle issues within experimental, model and numerical simulations of the behavior of particle suspensions. Applications of non-spherical particle suspension rheology are widespread and can be found in organic matrix composites, nanocomposites, biocomposites, fiber-filled fresh concrete flow, blood and biologic fluids. - Understand how to model and predict the final microstructure and properties of particle suspensions - Explores nano, micro, meso and macro scales - Rheology, thermomechanical and electromagnetic physics are discussed

Academic Chemistry IX World Scientific
Attention is focused on a suspension of buoyant particles (or droplets) in acontinuous fluid. In the presence of a force field, gravitational or centrifugal, and exposed to ordinary boundary constraints, a variety of fascinating flows can be obtained. These motions are essential ingre- dients in the widely used separation technology, where im-provedand new designs may be beneficial, but they are also interesting from a broader, academic point of view. In these respects, the recent investigations on these flows patterns, their underlying mechanisms and mathematical modeling - have accrued to a significant, relevant body of knowledge. The main objective of this book is to summarize - in a systematic, coherent and consistent fashion - the theoretical up to date contributions which seem fundamental in understanding, simulation and development of the subject.

Pharmaceutical Calculations SBPD Publications
Essential text on the practical application and theory of colloidal suspension rheology, written by an international coalition of experts.

Pharmaceutical Suspensions Elsevier

For those who are new to the subject, ocular pharmacology can be a difficult and sometimes overwhelming topic. Ophthalmic Medications and Pharmacology, Second Edition is a reader-friendly guide that provides a quick review and basic clinical reference of ocular pharmacology. In this updated and revised second edition, Drs. Duvall and Kershner present an overview to the medication and drugs found most commonly in ophthalmic practice without overwhelming those professionals new to the subject. Ophthalmic Medications and Pharmacology concisely reviews commonly used and prescribed medications, how they work, dosage, therapeutic use, and potential side effects. This new edition also highlights key information for patients about the medications they encounter and are prescribed in the clinic. Ophthalmic staff, students, and research professionals looking for an introduction and basic go-to guide will welcome having a copy of Ophthalmic Medications and Pharmacology by their side. New to this edition: · An appendix focused on the drug approval process. · A chapter on retinal therapies. · Study icons to assist in the learning process. · New coverage of vasoconstrictors.

Biopharmaceutics of Ocular Drug Delivery Cambridge University Press

A selection of papers by Pierre-Gilles de Gennes - 1991 Nobel Prize winner in Physics - which have had a long-lasting impact on our understanding of condensed matter. Ideas on polymers, liquid crystals and interfaces are described. The author has added some afterthoughts to the main papers.

Theory and Applications of Colloidal Suspension Rheology Springer Science & Business Media

Introduces mixtures and solutions, including the different types of mixtures, how they are used in everyday life, and how they can be physically and chemically separated.

Introduction to Physical Chemistry John Wiley & Sons

A general and introductory survey of foams, emulsions and cellular materials. Foams and emulsions are illustrations of some fundamental concepts in statistical thermodynamics, rheology, elasticity and the physics and chemistry of divided media and interfaces. They also give rise to some of the most beautiful geometrical shapes and tilings, ordered or disordered. The chapters are grouped into sections having fairly loose boundaries. Each chapter is intelligible alone, but cross referencing means that the few concepts that may not be familiar to the reader can be found in other chapters in the book. Audience: Research students, researchers and teachers in physics, physical chemistry, materials science, mechanical engineering and geometry.

Colloidal Dispersions Elsevier

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.

Suspension Acoustics Wiley-VCH

This book gives a comprehensive overview of the physical properties of charged particles in solutions and suspension. Selected experimental techniques, theoretical models, and three basic shapes 1/m spheres, rods, and coils 1/m are studied. A major emphasis of this book is the role of the dynamics and distribution of the electrolyte ions in the determination of the physical properties of the macroionic solutions and suspensions. Combining a solid theoretical foundation with clear and

comprehensive discussions addressed to experimentalists, this book will be of great interest to research scientists in physical chemistry, colloid chemistry, biophysics, biochemistry, and biochemical engineering.