

|                         |  |
|-------------------------|--|
| 1. Record Nr.           | UNINA9910778484303321  |
| Autore                  | Goodwin James W (James William)  |
| Titolo                  | Colloids and interfaces with surfactants and polymers [[electronic resource] /] / Jim Goodwin  |
| Pubbl/distr/stampa      | Hoboken, NJ, : Wiley, 2009   |
| ISBN                    | 1-282-25941-5<br>9786612259418<br>0-470-51880-4<br>0-470-74897-4   |
| Edizione                | [2nd ed.]  |
| Descrizione fisica      | 1 online resource (391 p.)   |
| Disciplina              | 541.345<br>541/.345  |
| Soggetti                | Colloids<br>Surface active agents<br>Surface chemistry<br>Polymers   |
| Lingua di pubblicazione | Inglese  |
| Formato                 | Materiale a stampa   |
| Livello bibliografico   | Monografia   |
| Note generali           | Description based upon print version of record.  |
| Nota di bibliografia    | Includes bibliographical references and index.   |
| Nota di contenuto       | Colloids and Interfaces with Surfactants and Polymers; Contents; Preface to the Second Edition; Preface to the First Edition; 1 The Nature of Colloids; 1.1 Introduction; 1.2 Colloids in Action; 1.3 Concentrated Colloidal Dispersions; 1.4 Interfaces; 1.5 Surfactants; 1.6 Solution Polymers; 1.7 The World of Nanoparticles; 1.8 Preparation of Nanoparticles; 1.9 Nanocomposites; 1.10 Janus Particles; 1.11 Summary; 2 Macromolecules and Surfactants; 2.1 Introduction; 2.2 Macromolecular Definitions; 2.3 Conformation in Dilute Solutions; 2.4 The Flory-Huggins Theory of Polymer Solutions 2.5 Polymer Solution Phase Behaviour 2.6 Polymers at Surfaces; 2.7 Polymer Characterization; 2.8 Biopolymers; 2.9 Surfactants in Solution; 3 Interactions Between Colloidal Particles; 3.1 Introduction; 3.2 Intermolecular Attraction; 3.3 Notes on Complex Number Manipulation; 3.4 Dispersion Forces Between Particles; 3.5 Retarded Dispersion Forces; 3.6 The General or Lifshitz Theory of Dispersion Forces Between Particles; 3.7 Summary and Calculation Guide; 3.8 Calculation Strategy; |

3.9 The Depletion Interaction; 4 Forces of Repulsion; 4.1 Introduction;  
4.2 Electrostatic Interactions  
4.3 The Origins of Surface Charge 4.4 The Interaction Between Diffuse  
Double Layers; 4.5 The Interaction Between Two Spheres; 4.6 The Effect  
of Particle Concentration; 4.7 Steric Interactions; 4.8 Calculation  
Strategy; 5 The Stability of Dispersions; 5.1 Introduction; 5.2 The  
Stability of Charge-Stabilized Colloids - The DLVO Theory; 5.3  
Mechanisms of Aggregation; 5.4 Hetero-Coagulation and Hetero-  
Flocculation; 5.5 The Rate of Coagulation; 5.6 Aggregation in Flowing  
Dispersions; 6 The Wetting of Surfaces by Liquids; 6.1 Introduction; 6.2  
The Contact Angle  
6.3 Methods for the Measurement of Contact Angle 6.4 Contact Angle  
Hysteresis; 6.5 Spreading; 6.6 Curved Surfaces; 6.7 Capillarity; 6.8  
Temperature Effects; 6.9 Dynamic Contact Angles; 7 Emulsions and  
Microemulsions; 7.1 Introduction; 7.2 Emulsification; 7.3 Stability of  
Emulsions; 7.4 Microemulsions; 8 Characterization of Colloidal  
Particles; 8.1 Introduction; 8.2 Particle Size; 8.3 Microscopy; 8.4 Zonal  
Methods; 8.5 Scattering Methods; 8.6 Analysis of Scattered Radiation;  
8.7 Neutron Reflection; 8.8 Dynamic Light Scattering; 8.9  
Characterization of the Electrical Properties of Particles  
8.10 Viscosities of Dilute Dispersions 8.11 Sedimentation of  
Dispersions; 9 Concentrated Dispersions; 9.1 Introduction; 9.2 The  
Structure of Concentrated Dispersions; 9.3 Rheology; 9.4 Linear  
Viscoelasticity of Colloidal Dispersions; 9.5 Phenomenology; 9.6  
Sedimentation in Concentrated Dispersions; Index; Color Plate

---

Sommario/riassunto

From blood to milk, pumice to gelatine, most scientists interact with colloids on a daily basis without any real knowledge of their nature. Building on the success of the first edition, *Colloids and Interfaces with Surfactants and Polymers Second Edition* is a user-friendly, non-technical introduction to colloids and interfaces. Includes: Many practical examples of colloid and interface science An enhanced section on fluorescence microscopy, a widely used technique in biological systems for the optical imaging of cellular structures A new section on phenomena

---