Record Nr. UNINA9910877540403321 Autore Pashley Richard M **Titolo** Applied colloid and surface chemistry [[electronic resource] /] / Richard M. Pashley and Marilyn E. Karaman Chichester, West Sussex, England; ; Hoboken, N.J., : J. Wiley, c2004 Pubbl/distr/stampa **ISBN** 1-280-27617-7 9786610276172 0-470-86884-8 0-470-01470-9 0-470-34588-8 Descrizione fisica 1 online resource (202 p.) Altri autori (Persone) KaramanMarilyn E Disciplina 541.345 541/.345 Soggetti Colloids Surface chemistry Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Includes index. ""Applied Colloid and Surface Chemistry""; ""Contents""; ""Preface""; ""1 Nota di contenuto Introduction"": ""Introduction to the nature of colloidal solutions"": ""The forces involved in colloidal stability""; ""Types of colloidal systems""; ""The link between colloids and surfaces""; ""Wetting properties and their industrial importance""; ""Recommended resource books""; ""Appendices""; ""2 Surface Tension and Wetting""; ""The equivalence of the force and energy description of surface tension and surface energy""; ""Derivation of the Laplace pressure equation"" ""Methods for determining the surface tension of liquids""""Capillary rise and the free energy analysis""; ""The Kelvin equation""; ""The surface energy and cohesion of solids""; ""The contact angle""; ""Industrial Report: Photographic-quality printing""; ""Sample problems""; ""Experiment 2.1: Rod in free surface (RIFS) method for the measurement of the surface tension of liquids""; ""Experiment 2.2: Contact angle measurements""; ""3 Thermodynamics of Adsorption"";

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""Basic surface thermodynamics""; ""Derivation of the Gibbs adsorption

""Determination of surfactant adsorption densities"""Industrial Report: Soil microstructure, permeability and interparticle forces"; ""Sample problems"": ""Experiment 3.1: Adsorption of acetic acid on to activated charcoal""; ""4 Surfactants and Self-assembly""; ""Introduction to surfactants""; ""Common properties of surfactant solutions""; ""Thermodynamics of surfactant self-assembly""; ""Self-assembled surfactant structures""; ""Surfactants and detergency""; ""Industrial Report: Colloid science in detergency""; ""Sample problems""; ""Experiment 4.1: Determination of micelle ionization"" ""5 Emulsions and Microemulsions"""The conditions required to form emulsions and microemulsions""; ""Emulsion polymerization and the production of latex paints""; ""Photographic emulsions""; ""Emulsions in food science""; ""Industrial Report: Colloid science in foods""; ""Experiment 5.1: Determination of the phase behaviour of microemulsions""; ""Experiment 5.2: Determination of the phase behaviour of concentrated surfactant solutions"": ""6 Charged Colloids""; ""The formation of charged colloids in water""; ""The theory of the diffuse electrical double-layer""; ""The Debye length"" ""Retarded forces""

Sommario/riassunto

Applied Colloid and Surface Chemistry is a broad introduction to this interdisciplinary field. Taking a genuinely applied approach, with applications drawn from a wide range of industries, this book will meet the demands of the student and professional currently working in the field. The text includes keynote sections written by practicing industrial research scientists, bringing to the reader a wealth of real industrial examples. These examples range from water treatment through to soil management as well as examples taken from the coatings and photographic industries. To aid accessibility,