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Nota di contenuto	<p>""Applied Colloid and Surface Chemistry""; ""Contents""; ""Preface""; ""1 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""; ""Basic surface thermodynamics""; ""Derivation of the Gibbs adsorption isotherm""</p>

""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,
