

1. Record Nr.	UNINA9910144262403321
Autore	Hamley Ian W
Titolo	Introduction to soft matter [[electronic resource]] : synthetic and biological self-assembling materials // Ian W. Hamley
Pubbl/distr/stampa	Chichester, : Wiley, 2007
ISBN	9780470517338 (e-book) 9780470516096 (hbk.) 9780470516102 (pbk.)
Edizione	[Rev. ed.]
Descrizione fisica	1 online resource (vii, 328 p.) : ill
Disciplina	547.7
Soggetti	Polymers Colloids Micelles Liquid crystals
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Previous ed.: 2000.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	1. Introduction -- 2. Polymers -- 3. Colloids -- 4. Amphiphiles -- 5. Liquid crystals -- 6. Biological soft matter -- Numerical solutions to questions -- Index.
Sommario/riassunto	This book provides an introduction to this exciting and relatively new subject with chapters covering natural and synthetic polymers, colloids, surfactants and liquid crystals highlighting the many and varied applications of these materials. Written by an expert in the field, this book will be an essential reference for people working in both industry and academia and will aid in understanding of this increasingly popular topic. Contains a new chapter on biological soft matter; Newly edited and updated chapters including updated coverage of recent aspects of polymer science. Contains problems at the end of each chapter to facilitate understanding. Soft matter materials include polymers, colloids, emulsions, amphiphiles, surfactants, membranes, liquid crystals and biomaterials. Although these materials seem very different, they have common structural and dynamic properties that are somewhere between those of crystalline solids and simple molecular liquids and gases. Soft matter is an interdisciplinary subject drawing

not only from physics, chemistry and materials science but also from biology, biochemistry and engineering. These materials have a wide range of applications, such as in structural and packaging materials, foams and adhesives, detergents and cosmetics, paints, food additives and biological materials. Written in an "easy-to-follow style", this textbook provides an introduction to this exciting subject with chapters covering natural and synthetic polymers, colloids, surfactants, biological soft matter and liquid crystals and the many and varied applications of these materials. It has been newly edited and has chapters with updated coverage of recent aspects of polymer science. A series of questions and answers is also provided at the end of each chapter. The book contains a new chapter on biological soft matter, which adds significantly to the discussion of proteins, DNA and lipid membranes in the previous edition. The book will appeal to students of polymer, biomaterial, colloid, surface and interface science. Experienced researchers in the field will also find this a good introductory text for revising their knowledge of the basics.
