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Titolo	Fundamental Polymer Science / / by Ulf W. Gedde, Mikael S. Hedenqvist
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ISBN	3-030-29794-2
Edizione	[2nd ed. 2019.]
Descrizione fisica	1 online resource (501 pages) : illustrations
Collana	Graduate Texts in Physics, , 1868-4513
Disciplina	547.7
Soggetti	Amorphous substances Complex fluids Polymers Soft and Granular Matter, Complex Fluids and Microfluidics Polymer Sciences
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Introduction to polymer science -- Conformations in polymers -- Rubber elasticity -- Polymer solutions -- The glassy amorphous state -- The molten state -- Morphology of semicrystalline polymers -- Crystallization kinetics -- Chain orientation -- Polymer chemistry -- Solutions to problems given in exercises.
Sommario/riassunto	This successor to the popular textbook, “Polymer Physics” (Springer, 1999), is the result of a quarter-century of teaching experience as well as critical comments from specialists in the various sub-fields, resulting in better explanations and more complete coverage of key topics. With a new chapter on polymer synthesis, the perspective has been broadened significantly to encompass all of polymer science. Polysaccharides and proteins are included in essentially all chapters, while polyelectrolytes are new to the second edition. Cheap computing power has greatly expanded the role of simulation and modeling in the past two decades, which is reflected in many of the chapters. A supplementary chapter on basic thermodynamics is based on a course that the senior author has taught for seven years. Additional problems and carefully prepared graphics aid in understanding. Two principles are key to the textbook’s appeal: 1) Students learn that, independent of

the origin of the polymer, synthetic or native, the same general laws apply, and 2) students should benefit from the book without an extensive knowledge of mathematics. Taking the reader from the basics to an advanced level of understanding, the text meets the needs of a wide range of students in chemistry, physics, materials science, biotechnology, and civil engineering, and is suitable for both masters- and doctoral-level students. Praise for the previous edition: ...an excellent book, well written, authoritative, clear and concise, and copiously illustrated with appropriate line drawings, graphs and tables. - Polymer International ...an extremely useful book. It is a pleasure to recommend it to physical chemists and materials scientists, as well as physicists interested in the properties of polymeric materials. - Polymer News This valuable book is ideal for those who wish to get a brief background in polymer science as well as for those who seek a further grounding in the subject. - Colloid Polymer Science The solutions to the exercises are given in the final chapter, making it a well thought-out teaching text. - Polymer Science.