
Introduction To Physical Polymer Science

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much more fulfilling learning experience.

Introduction to Physical Polymer Science *Wiley-Interscience*
An Updated Edition of the Classic Text Polymers constitute the basis for the plastics, rubber, adhesives, fiber, and coating industries. The Fourth Edition of Introduction to Physical Polymer Science acknowledges the industrial success of polymers and the advancements made in the field while continuing to deliver the comprehensive introduction to polymer science that made its predecessors classic texts. The Fourth Edition continues its coverage of amorphous and crystalline materials, glass transitions, rubber elasticity, and mechanical behavior, and offers updated discussions of polymer blends, composites, and interfaces, as well as such basics as molecular weight determination. Thus, interrelationships among molecular structure, morphology, and mechanical behavior of polymers continue to provide much of the value of the book. Newly introduced topics include: * Nanocomposites, including carbon nanotubes and exfoliated montmorillonite clays * The structure, motions, and functions of DNA and proteins, as well as the interfaces of polymeric biomaterials with living organisms * The glass transition behavior of nano-thin plastic films In addition, new sections have been included on fire retardancy, friction and wear, optical tweezers, and more. Introduction to Physical Polymer Science, Fourth Edition provides both an essential introduction to the field as well as an entry point to the latest research and developments in polymer science and engineering,

making it an indispensable text for chemistry, chemical engineering, materials science and engineering, and polymer science and engineering students and professionals.

Introduction to Physical Polymer Science *John Wiley & Sons*

An Updated Edition of the Classic Text Polymers constitute the basis for the plastics, rubber, adhesives, fiber, and coating industries. The Fourth Edition of Introduction to Physical Polymer Science acknowledges the industrial success of polymers and the advancements made in the field while continuing to deliver the comprehensive introduction to polymer science that made its predecessors classic texts. The Fourth Edition continues its coverage of amorphous and crystalline materials, glass transitions, rubber elasticity, and mechanical behavior, and offers updated discussions of polymer blends, composites, and interfaces, as well as such basics as molecular weight determination. Thus, interrelationships among molecular structure, morphology, and mechanical behavior of polymers continue to provide much of the value of the book. Newly introduced topics include: * Nanocomposites, including carbon nanotubes and exfoliated montmorillonite clays * The structure, motions, and functions of DNA and proteins, as well as the interfaces of polymeric biomaterials with living organisms * The glass transition behavior of nano-thin plastic films In addition, new sections have been included on fire retardancy, friction and wear, optical tweezers, and more. Introduction to Physical Polymer Science, Fourth Edition provides both an essential introduction to the field as well as an entry point to the latest research and developments in polymer science and engineering,

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making it an indispensable text for chemistry, chemical engineering, materials science and engineering, and polymer science and engineering students and professionals.

An Introduction to Polymer Science *Wiley-VCH*

Introduction CHEMISTRY Chemical Structure Chain Polymerizations Non-Chain Polymerizations PHYSICAL CHEMISTRY Molecule Size and Shape Solution Thermodynamics Polymer Hydrodynamics PHYSICS Polymer Assemblies Transitions and Relaxations Solid State Properties TECHNOLOGY Auxiliaries Elastomers Fibers Plastics Appendix

Polymer Solutions

An Introduction to Physical Properties *John Wiley & Sons*

Polymer Solutions: An Introduction to Physical Properties offers a fresh, inclusive approach to teaching the fundamentals of physical polymer science. Students, instructors, and professionals in polymer chemistry, analytical chemistry, organic chemistry, engineering, materials, and textiles will find Iwao Teraoka's text at once accessible and highly detailed in its treatment of the properties of polymers in the solution phase. Teraoka's purpose in writing Polymer Solutions is twofold: to familiarize the advanced undergraduate and beginning graduate student with basic concepts, theories, models, and experimental techniques for polymer solutions; and to provide a reference for researchers working in the area of polymer solutions as well as those in charge of chromatographic characterization of polymers. The author's incorporation of recent advances in the instrumentation

of size-exclusion chromatography, the method by which polymers are analyzed, renders the text particularly topical. Subjects discussed include: Real, ideal, Gaussian, semirigid, and branched polymer chains Polymer solutions and thermodynamics Static light scattering of a polymer solution Dynamic light scattering and diffusion of polymers Dynamics of dilute and semidilute polymer solutions Study questions at the end of each chapter not only provide students with the opportunity to test their understanding, but also introduce topics relevant to polymer solutions not included in the main text. With over 250 geometrical model diagrams, *Polymer Solutions* is a necessary reference for students and for scientists pursuing a broader understanding of polymers.

Fundamentals of Polymer Science

An Introductory Text, Second Edition *Routledge*

Now in its second edition, this widely used text provides a unique presentation of today's polymer science. It is both comprehensive and readable. The authors are leading educators in this field with extensive background in industrial and academic polymer research. The text starts with a description of the types of microstructures found in polymer

Introduction to Polymer Science and Chemistry

A Problem-Solving Approach *CRC Press*

With such a wide diversity of properties and applications, is it any wonder that industry and academia have such a fascination with

polymers? A solid introduction to such an enormous and important field is critical to the modern polymer scientist-to-be, but most of the available books do not stress practical problem solving or include recent advances. Serving as the polymer book for the new millennium, *Introduction to Polymer Science and Chemistry: A Problem Solving Approach* unites the fundamentals of polymer science and polymer chemistry in a seamless presentation. Emphasizing polymerization kinetics, the author uses a unique question-and-answer approach when developing theory or introducing new concepts. The first four chapters introduce polymer science, focusing on physical and molecular properties, solution behavior, and molecular weights. The remainder of the book explores polymer chemistry, devoting individual, self-contained chapters to the main types of polymerization reactions: condensation; free radical; ionic; coordination; and ring-opening. It introduces recent advances such as supramolecular polymerization, hyperbranching, photoemulsion polymerization, the grafting-from polymerization process, polymer brushes, living/controlled radical polymerization, and immobilized metallocene catalysts. With numerical problems accompanying the discussion at every step along with numerous end-of-chapter exercises, *Introduction to Chemical Polymer Science: A Problem Solving Approach* is an ideal introductory text and self-study vehicle for mastering the principles and methodologies of modern polymer science and chemistry.

An Introduction to Polymer Physics *Cambridge University Press*

Publisher Description

Introduction to Polymer Chemistry, Fourth Edition *CRC Press*

Introduction to Polymer Chemistry provides undergraduate students with a much-needed, well-rounded presentation of the principles and applications of natural, synthetic, inorganic, and organic polymers. With an emphasis on the environment and green chemistry and materials, this fourth edition continues to provide detailed coverage of natural and synthetic giant molecules, inorganic and organic polymers, elastomers, adhesives, coatings, fibers, plastics, blends, caulks, composites, and ceramics. Building on undergraduate work in foundational courses, the text fulfills the American Chemical Society Committee on Professional Training (ACS CPT) in-depth course requirement

Applied Polymer Science: 21st Century *Elsevier*

The 75th Anniversary Celebration of the Division of Polymeric Materials: Science and Engineering of the American Chemical Society, in 1999 sparked this third edition of Applied Polymer Science with emphasis on the developments of the last few years and a serious look at the challenges and expectations of the 21st Century. This book is divided into six sections, each with an Associate Editor responsible for the contents with the group of Associate Editors acting as a board to interweave and interconnect various topics and to insure complete coverage. These areas represent both traditional areas and emerging areas, but always with coverage that is timely. The areas and associated

chapters represent vistas where PMSE and its members have made and are continuing to make vital contributions. The authors are leaders in their fields and have graciously donated their efforts to encourage the scientists of the next 75 years to further contribute to the well being of the society in which we all live. Synthesis, characterization, and application are three of the legs that hold up a steady table. The fourth is creativity. Each of the three strong legs are present in this book with creativity present as the authors were asked to look forward in predicting areas in need of work and potential applications. The book begins with an introductory history chapter introducing readers to PMSE. The second chapter introduces the very basic science, terms and concepts critical to polymer science and technology. Sections two, three and four focus on application areas emphasizing emerging trends and applications. Section five emphasizes the essential areas of characterization. Section six contains chapters focusing of the synthesis of the materials.

Introduction to Polymer Physics *Oxford University Press*

This book is a concise textbook on polymer physics for graduate students. Researchers in physics, physical chemistry and chemical engineers who are interested in complex fluids can also benefit from the book.

Fundamentals of Polymer Science for Engineers *John Wiley & Sons*

Filling a gap in the market, this textbook provides a concise, yet thorough introduction to polymer science for advanced engineering students and practitioners, focusing on the chemical,

physical and materials science aspects that are most relevant for engineering applications. After covering polymer synthesis and properties, the major section of the book is devoted to polymeric materials, such as thermoplastics and polymer composites, polymer processing such as injection molding and extrusion, and methods for large-scale polymer characterization. The text concludes with an overview of engineering plastics. The emphasis throughout is on application-relevant topics, and the author focuses on real-life, industry-relevant polymeric materials.

Polymer Chemistry *CRC Press*

A well-rounded and articulate examination of polymer properties at the molecular level, *Polymer Chemistry* focuses on fundamental principles based on underlying chemical structures, polymer synthesis, characterization, and properties. It emphasizes the logical progression of concepts and provide mathematical tools as needed as well as fully derived problems for advanced calculations. The much-anticipated Third Edition expands and reorganizes material to better develop polymer chemistry concepts and update the remaining chapters. New examples and problems are also featured throughout. This revised edition: Integrates concepts from physics, biology, materials science, chemical engineering, and statistics as needed. Contains mathematical tools and step-by-step derivations for example problems. Incorporates new theories and experiments using the latest tools and instrumentation and topics that appear prominently in current polymer science journals. *Polymer Chemistry*, Third Edition offers a logical presentation of topics that can be scaled to meet the needs of introductory as

well as more advanced courses in chemistry, materials science, polymer science, and chemical engineering.

An Introduction to Polymer Chemistry

The Commonwealth and International Library: Intermediate Chemistry Division *Elsevier*

An Introduction to Polymer Chemistry focuses on the fundamental chemistry of synthetic organic polymers of high molecular weight. This book explains the basic principles of polymer chemistry, from significant methods of molecular weight determination to the simpler mechanisms of polymerization. The osmotic, light scattering, and viscosity methods of molecular weight determination are fully discussed together with the kinetics of selected examples of condensation and free-radical addition polymerization. The main features of ionic polymerization are also elaborated. This text, however, does not cover the thermodynamics of polymer solutions or the methods of structure determination. This publication is a good reference to university and technical college students researching on polymer chemistry.

Polymer Science and Nanotechnology

Fundamentals and Applications *Elsevier*

Polymer Science and Nanotechnology: Fundamentals and Applications brings together the latest advances in polymer science and nanoscience. Sections explain the fundamentals of polymer science, including key aspects and methods in terms of

molecular structure, synthesis, characterization, microstructure, phase structure and processing and properties before discussing the materials of particular interest and utility for novel applications, such as hydrogels, natural polymers, smart polymers and polymeric biomaterials. The second part of the book examines essential techniques in nanotechnology, with an emphasis on the utilization of advanced polymeric materials in the context of nanoscience. Throughout the book, chapters are prepared so that materials and products can be geared towards specific applications. Two chapters cover, in detail, major application areas, including fuel and solar cells, tissue engineering, drug and gene delivery, membranes, water treatment and oil recovery. Presents the latest applications of polymers and polymeric nanomaterials, across energy, biomedical, pharmaceutical, and environmental fields. Contains detailed coverage of polymer nanocomposites, polymer nanoparticles, and hybrid polymer-metallic nanoparticles. Supports an interdisciplinary approach, enabling readers from different disciplines to understand polymer science and nanotechnology and the interface between them.

Polymer Engineering Science and Viscoelasticity

An Introduction *Springer*

This book provides a unified mechanics and materials perspective on polymers: both the mathematics of viscoelasticity theory as well as the physical mechanisms behind polymer deformation processes. Introductory material on fundamental mechanics is included to provide a continuous baseline for readers from all

disciplines. Introductory material on the chemical and molecular basis of polymers is also included, which is essential to the understanding of the thermomechanical response. This self-contained text covers the viscoelastic characterization of polymers including constitutive modeling, experimental methods, thermal response, and stress and failure analysis. Example problems are provided within the text as well as at the end of each chapter. New to this edition:

- One new chapter on the use of nano-material inclusions for structural polymer applications and applications such as fiber-reinforced polymers and adhesively bonded structures
- Brings up-to-date polymer production and sales data and equipment and procedures for evaluating polymer characterization and classification
- The work serves as a comprehensive reference for advanced seniors seeking graduate level courses, first and second year graduate students, and practicing engineers

Introduction to Polymer Science and Technology *Bookboon*

Introduction to Polymer Physics *Springer Science & Business Media*

Modern polymer materials are designed by applying principles of correlation between chemical structure, physical macrostructure and technological properties. Fundamentals of polymer physics are explained in this book without excessive use of calculations. Four main sections treat relaxation of polymers, melting and crystallization, the mechanism of deformation in thermoplastics, elastomers and multiphase systems, and thermodynamics of mixing and swelling of polymers and polymer networks. The book

presents the theoretical models of polymer physics in a comprehensive style and relates their applicability to real polymer systems in terms of the available experimental observations.

Polymer Science and Technology *CRC Press*

Your search for the perfect polymers textbook ends here - with Polymer Science and Technology. By incorporating an innovative approach and consolidating in one volume the fundamentals currently covered piecemeal in several books, this efficient text simplifies the learning of polymer science. The book is divided into three main sections: polymer fundamentals; polymer formation and conversion into useful articles; and polymer properties and applications. Polymer Science and Technology emphasizes the basic, qualitative understanding of the concepts rather than rote memorization or detailed mathematical analysis. Since the book focuses on the ultimate property of the finished product, it minimizes laborious descriptions of experimental procedures used for the characterization of polymers. Instead, the author highlights how the various stages involved in the production of the finished product influence its properties. Well-organized, clear-cut, and user-friendly, Polymer Science and Technology is an outstanding textbook for teaching junior and senior level undergraduates and first year graduate students in an introductory course covering the challenging subject of polymers.

Polymer Physics *OUP Oxford*

Polymer Physics provides an introduction to the field for upper

level undergraduates and first year graduate students. Any student with a working knowledge of calculus, physics and chemistry should be able to read this book. The essential tools of the polymer physical chemist or engineer are derived in this book without skipping any steps.

Rubber Technology *Springer Science & Business Media*

About ten years after the publication of the Second Edition (1973), it became apparent that it was time for an up-date of this book. This was especially true in this case, since the subject matter has traditionally dealt mainly with the structure, properties, and technology of the various elastomers used in industry, and these are bound to undergo significant changes over the period of a decade. In revising the contents of this volume, it was thought best to keep the original format. Hence the first five chapters discuss the same general subject matter as before. The chapters dealing with natural rubber and the synthetic elastomers are up-dated, and an entirely new chapter has been added on the thermoplastic elastomers, which have, of course, grown tremendously in importance. Another innovation is the addition of a new chapter, "Miscellaneous Elastomers," to take care of "old" elastomers, e.g., polysulfides, which have decreased somewhat in importance, as well as to introduce some of the newly-developed synthetic rubbers which have not yet reached high production levels. The editor wishes to express his sincere appreciation to all the contributors, without whose close cooperation this task would have been impossible. He would especially like to acknowledge the invaluable assistance of Dr. Howard Stephens in the planning of this book, and for his

suggestion of suitable authors.

Brydson's Plastics Materials *William Andrew*

Brydson's Plastics Materials, Eighth Edition, provides a comprehensive overview of the commercially available plastics materials that bridge the gap between theory and practice. The book enables scientists to understand the commercial implications of their work and provides engineers with essential theory. Since the previous edition, many developments have taken place in plastics materials, such as the growth in the commercial use of sustainable bioplastics, so this book brings the user fully up-to-date with the latest materials, references, units, and figures that have all been thoroughly updated. The book remains the authoritative resource for engineers, suppliers, researchers, materials scientists, and academics in the field of polymers, including current best practice, processing, and material selection information and health and safety guidance, along with discussions of sustainability and the commercial importance of various plastics and additives, including nanofillers and graphene as property modifiers. With a 50 year history as the principal reference in the field of plastics material, and fully updated by an expert team of polymer scientists and engineers, this book is essential reading for researchers and practitioners in this field. Presents a one-stop-shop for easily accessible information on plastics materials, now updated to include the latest biopolymers, high temperature engineering plastics, thermoplastic elastomers, and more Includes thoroughly revised and reorganised material as contributed by an expert team who make the book relevant to all plastics engineers, materials

scientists, and students of polymers Includes the latest guidance on health, safety, and sustainability, including materials safety data sheets, local regulations, and a discussion of recycling issues

Principles of Polymer Science *Alpha Science Int'l Ltd.*

"Principles of Polymer Science introduces several basic and advanced aspects of polymers for the undergraduate and graduate students in chemistry, chemical engineering and materials science. The second and thoroughly revised edition includes the technical aspects of synthesis, characterization, behaviour and technology in a straightforward and lucid manner. Separate chapters on natural, inorganic and specialty polymers would attract readers from interdisciplinary courses."--BOOK JACKET.

Multicomponent Polymeric Materials *Springer*

The book offers an in-depth review of the materials design and manufacturing processes employed in the development of multi-component or multiphase polymer material systems. This field has seen rapid growth in both academic and industrial research, as multiphase materials are increasingly replacing traditional single-component materials in commercial applications. Many obstacles can be overcome by processing and using multiphase materials in automobile, construction, aerospace, food processing, and other chemical industry applications. The comprehensive description of the processing, characterization, and application of multiphase materials presented in this book offers a world of new ideas and potential technological

advantages for academics, researchers, students, and industrial manufacturers from diverse fields including rubber engineering, polymer chemistry, materials processing and chemical science. From the commercial point of view it will be of great value to those involved in processing, optimizing and manufacturing new materials for novel end-use applications. The book takes a detailed approach to the description of process parameters, process optimization, mold design, and other core manufacturing information. Details of injection, extrusion, and compression molding processes have been provided based on the most recent advances in the field. Over two comprehensive sections the book covers the entire field of multiphase polymer materials, from a detailed description of material design and processing to the cutting-edge applications of such multiphase materials. It provides both precise guidelines and general concepts for the present and future leaders in academic and industrial sectors.

Supramolecular Polymer Networks and Gels *Springer*

The series *Advances in Polymer Science* presents critical reviews of the present and future trends in polymer and biopolymer science. It covers all areas of research in polymer and biopolymer science including chemistry, physical chemistry, physics, material science. The thematic volumes are addressed to scientists, whether at universities or in industry, who wish to keep abreast of the important advances in the covered topics. *Advances in Polymer Science* enjoys a longstanding tradition and good reputation in its community. Each volume is dedicated to a current topic and each review critically surveys one aspect of that topic, to place it within the context of the volume. The volumes

typically summarize the significant developments of the last 5 to 10 years and discuss them critically, presenting selected examples, explaining and illustrating the important principles and bringing together many important references of primary literature. On that basis, future research directions in the area can be discussed. *Advances in Polymer Science* volumes thus are important references for every polymer scientist, as well as for other scientists interested in polymer science - as an introduction to a neighboring field, or as a compilation of detailed information for the specialist. Review articles for the individual volumes are invited by the volume editors. Single contributions can be specially commissioned. Readership: Polymer scientists, or scientists in related fields interested in polymer and biopolymer science, at universities or in industry, graduate students.

Polymer Science and Technology *Createspace Independent Publishing Platform*

Polymer Science and Technology By Joel R. Fried

Properties of Polymers *Elsevier*

Properties of Polymers: Their Correlation with Chemical Structure; Their Numerical Estimation and Prediction from Additive Group Contributions summarizes the latest developments regarding polymers, their properties in relation to chemical structure, and methods for estimating and predicting numerical properties from chemical structure. In particular, it examines polymer electrical properties, magnetic properties, and mechanical properties, as well as their crystallization and environmental behavior and failure. The rheological properties of polymer melts and polymer

solutions are also considered. Organized into seven parts encompassing 27 chapters, this book begins with an overview of polymer science and engineering, including the typology of polymers and their properties. It then turns to a discussion of thermophysical properties, from transition temperatures to volumetric and calorimetric properties, along with the cohesive aspects and conformation statistics. It also introduces the reader to the behavior of polymers in electromagnetic and mechanical fields of force. The book covers the quantities that influence the transport of heat, momentum, and matter, particularly heat conductivity, viscosity, and diffusivity; properties that control the chemical stability and breakdown of polymers; and polymer properties as an integral concept, with emphasis on processing and product properties. Readers will find tables that give valuable (numerical) data on polymers and include a survey of the group contributions (increments) of almost every additive function considered. This book is a valuable resource for anyone working on practical problems in the field of polymers, including organic chemists, chemical engineers, polymer processors, polymer technologists, and both graduate and PhD students.

Physical Aspects of Polymer Self-Assembly *John Wiley & Sons*

Offering an overview of principles and techniques, this book covers all major categories of self-assembled polymers – properties, processes, and design. Each chapter focuses on morphology, applications, and advanced concepts to illustrate the advantages of polymer self-assembly across industrial and academic research. • Provides an organized, comprehensive

overview of polymer self-assembly, its fundamentals, principles, and applications • Includes chapters on block copolymers, amphiphilic polymers, supramolecular polymers, rotaxenes, polymer gels, dendrimers, and small molecules in polymer matrices • Focuses on novel applications, block copolymer assembly to nanotechnology, photonics and metamaterials, molecular machines and artificial muscle, gels that can be applied to polymer science, materials science, and nanotechnology • Examines state-of-the-art concepts, like lithographic patterning and foldaxane • Discusses challenges and future outlook of a popular and emerging field of study

Polymer Chemistry

Properties and Application *Carl Hanser Verlag GmbH Co KG*

This book provides a comprehensive introduction to the study of polymers. Special emphasis is given to the characteristics that set polymers apart from small molecules, as studied in classic chemistry courses. The various branches of polymer science are introduced and discussed in a systematic manner, starting from basic chemical structures, continuing through supermolecular organization and physical properties. Specific examples are used throughout to illustrate how end usage relates to the principles under discussion. A series of chapters is devoted to case studies describing the principal classes of synthetic polymers. Content includes: - Polymerization - Characterization of Polymers - Rheological Description of Polymer Melts - Structural Development - Properties - Compounding and Extrusion Processes - Molding processes - Additional Methods of

Manufacture - Commodity Polymers - Engineering Thermoplastics
- Neat Stuff

Principles of Polymer Chemistry *Springer Science & Business Media*

This successful textbook undergoes a change of character in the third edition. Where earlier editions covered organic polymer chemistry, the third edition covers both physical and organic chemistry. Thus kinetics and thermodynamics of polymerization reactions are discussed. This edition is also distinct from all other polymer textbooks because of its coverage of such currently hot topics as photonic polymers, electricity conducting polymers, polymeric materials for immobilization of reagents and drug release, organic solar cells, organic light emitting diodes. This textbook contains review questions at the end of every chapter, references for further reading, and numerous examples of commercially important processes.

Textbook of Polymer Science *John Wiley & Sons*

This Third Edition of the classic, best-selling polymer science textbook surveys theory and practice of all major phases of polymer science, engineering, and technology, including polymerization, solution theory, fractionation and molecular-weight measurement, solid-state properties, structure-property relationships, and the preparation, fabrication and properties of commercially-important plastics, fibers, and elastomers.

Polymer Science and Engineering

The Shifting Research Frontiers *National Academies Press*

Polymers are used in everything from nylon stockings to commercial aircraft to artificial heart valves, and they have a key role in addressing international competitiveness and other national issues. Polymer Science and Engineering explores the universe of polymers, describing their properties and wide-ranging potential, and presents the state of the science, with a hard look at downward trends in research support. Leading experts offer findings, recommendations, and research directions. Lively vignettes provide snapshots of polymers in everyday applications. The volume includes an overview of the use of polymers in such fields as medicine and biotechnology, information and communication, housing and construction, energy and transportation, national defense, and environmental protection. The committee looks at the various classes of polymers--plastics, fibers, composites, and other materials, as well as polymers used as membranes and coatings--and how their composition and specific methods of processing result in unparalleled usefulness. The reader can also learn the science behind the technology, including efforts to model polymer synthesis after nature's methods, and breakthroughs in characterizing polymer properties needed for twenty-first-century applications. This informative volume will be important to chemists, engineers, materials scientists, researchers, industrialists, and policymakers interested in the role of polymers, as well as to science and engineering educators and students.

Principles of Polymer Chemistry *Cornell University Press*

Polymer Physics

A Molecular Approach *Springer Science & Business Media*

A molecular view on the fundamental issues in polymer physics is provided with an aim at students in chemistry, chemical engineering, condensed matter physics and material science courses. An updated translation by the author, a renowned Chinese chemist, it has been proven to be an effective source of learning for many years. Up-to-date developments are reflected throughout the work in this concise presentation of the topic. The author aims at presenting the subject in an efficient manner, which makes this particularly suitable for teaching polymer physics in settings where time is limited, without having to sacrifice the extensive scope that this topic demands.

Chain Mobility and Progress in Medicine, Pharmaceuticals, and Polymer Science and Technology *Chemtec Publishing*

Chain movement, chain mobility, segmental mobility, segmental dynamics, chain orientation are the primary subjects of this monograph having utmost importance in polymer science and technology, medicine, pharmaceutical, and many other applications.

Designing of Elastomer Nanocomposites: From Theory to Applications *Springer*

The series *Advances in Polymer Science* presents critical reviews of the present and future trends in polymer and biopolymer science. It covers all areas of research in polymer and biopolymer science including chemistry, physical chemistry, physics, material

science. The thematic volumes are addressed to scientists, whether at universities or in industry, who wish to keep abreast of the important advances in the covered topics. *Advances in Polymer Science* enjoys a longstanding tradition and good reputation in its community. Each volume is dedicated to a current topic, and each review critically surveys one aspect of that topic, to place it within the context of the volume. The volumes typically summarize the significant developments of the last 5 to 10 years and discuss them critically, presenting selected examples, explaining and illustrating the important principles, and bringing together many important references of primary literature. On that basis, future research directions in the area can be discussed. *Advances in Polymer Science* volumes thus are important references for every polymer scientist, as well as for other scientists interested in polymer science - as an introduction to a neighboring field, or as a compilation of detailed information for the specialist. Review articles for the individual volumes are invited by the volume editors. Single contributions can be specially commissioned. Readership: Polymer scientists, or scientists in related fields interested in polymer and biopolymer science, at universities or in industry, graduate students.

The Elements of Polymer Science and Engineering

An Introductory Text for Engineers and Chemists *Elsevier*

This introductory text is intended as the basis for a two or three semester course in synthetic macromolecules. It can also serve as a self-instruction guide for engineers and scientists without

formal training in the subject who find themselves working with polymers. For this reason, the material covered begins with basic concepts and proceeds to current practice, where appropriate. Serves as both a textbook and an introduction for scientists in the field. Problems accompany each chapter.

Introductory Polymer Chemistry *New Age International*

Focuses on polymer chemistry. This text is suitable for students who have studied in an Indian University for a BSc degree.

Progress in Polymer Materials Science

Research, Development and Applications *CRC Press*

With chapters by the editors and other experts in the field of polymer science, this book covers a broad selection of important research advances in the field, including updates on enzymatic destruction and photoelectric characteristics, studies on the changes in the polymer molecular mass during hydrolysis and a new type of bioadditive for motor f