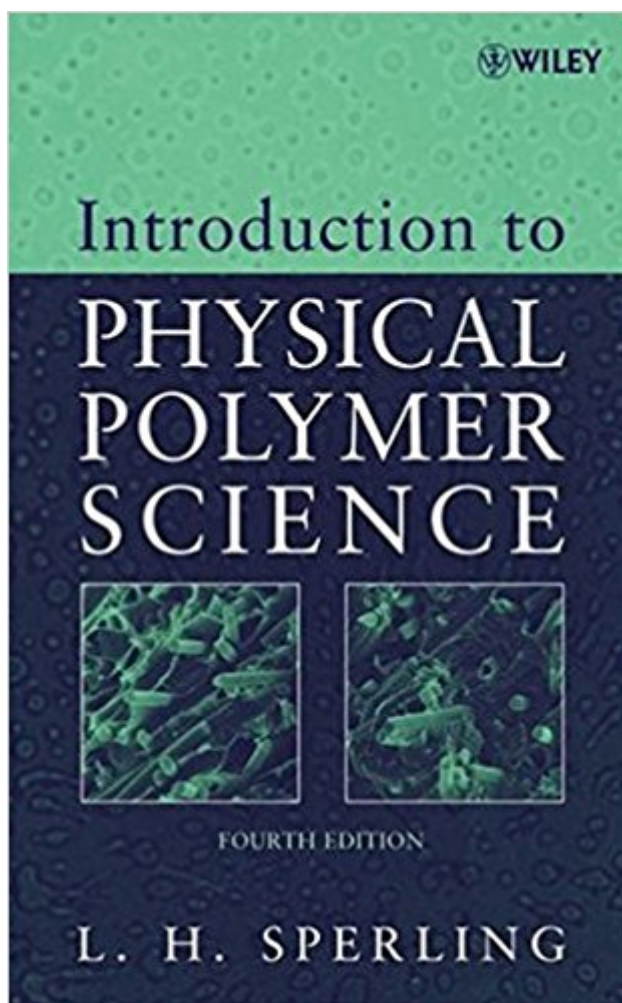


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# Introduction To Physical Polymer Science



## Synopsis

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.

## Book Information

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## Customer Reviews

"Anyone in need of a basic text on polymer science would find this to be a very good choice, and it is highly recommended." (IEEE Electrical Insulation Magazine, January/February 2007)

Updated and revised, it focuses on the role of molecular conformation and configuration in determining the physical behavior of polymers. New features include the amorphous and crystalline states of polymers; macromolecular hypothesis and historical development of photophysics and fluorescence; thermodynamics of blending polymers and polymer/polymer phase diagrams; a discussion of rheology plus gelatinous materials; and a variety of contemporary topics emphasizing surface, interfacial and electrical behavior of polymers, nonlinear optics and high temperature substances. Each chapter includes several classroom demonstrations and problem sets. --This text refers to an out of print or unavailable edition of this title.

I read about 90% of this book for my course in physical polymer science. I didn't read the last couple of chapters. This book was a good introduction to the subject. I learned a lot about physical polymer science simply from reading this text.

I love science and this book helps feed my need for more advanced info

This book is poorly written, lacking in information, and what information it does contain is roughly edited; there are errors throughout. I bought this book strictly for a class and used it almost only for the questions at the end of each chapter.

Sperling's book stands out as the most useful polymer science text, compiling essential elements of varied physical properties and behaviour. The third edition has up to date material on all aspects of polymer physics including chapters on polymer surfaces and interfaces as well as on multicomponent polymer systems and liquid crystalline polymers. In my opinion, as a beginners guide, the book is definitely outscored over all other texts in market including Billmeyer, Painter Coleman, Rodriguez, etc. The book also contains a good description of various polymer characterization techniques. The material covered is adequate to provide basic information about each field in polymer physics, and the textbook has enough material to be useful for two or three courses. The author presents a lot of tables in the book, that succinctly summarize important points related to that topic. Coupled with Strobl's book, which has slightly advanced description of polymer

physics, and Doi's Introduction to polymer physics, which has mathematically intensive description of statistical mechanics of polymers, you have three texts to teach you essentially everything there is to know in Polymer Physics!! (Perhaps you can add a text for Polymer Rheology, say by Larson!)

Like most textbooks, its verbose and hard to read at times. However, if one were to study polymers for more than just a course, it makes a handy reference tool unlike any other I or my friends have come across. Having this book for other courses would have been worth paying full price (but you don't have to) and I only wish I had come across it earlier.

This book introduced me to physical polymer science. I have a strong interest in this field. The book is very informative but not easy to read. However, it is very helpful that key points in the chapters are depicted quite nicely by diagrams and graphs.

I don't and won't read this book unless we are not going to take an exam on this field. (Basically because our professor recommended that the exam we are taking is based on this book.) But only one chapter from it. I haven't read other chapters but only chapter 9. And I am so disappointed! The mathematical deriving process are rough, and things like they are coming from nowhere. Sometimes the author made mistakes even when he was doing derivatives. Paradox are everywhere. The examples given uses the equation which lost a  $1/2$  factor from the formula given previously. And I have no idea which one is right or wrong. I think Prof Sperling is too busy to check the typos? I have just read 15 pages and the typos are at least 20 of them. I am so disappointed that this book is going to be a textbook for college students. I am afraid the students will hate this field after they used this as the textbook! I just cannot imagine how he can be a professor in Lehigh Univ and publish papers every year. Looking at the book he composed, is a nightmare. Hope he could be retired soon so he can save some Ph.D's academic career.

Like any other text. Too pricy if you ask me.

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