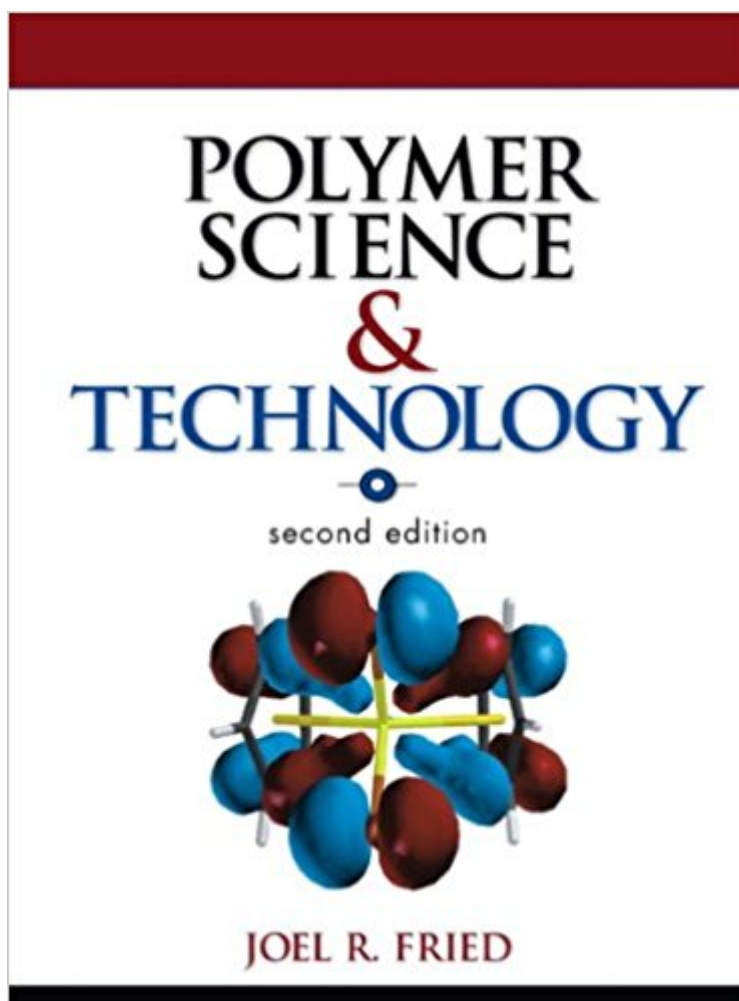


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# Polymer Science And Technology (2nd Edition)



## Synopsis

Appropriate for upper level undergraduate and graduate level courses in Chemical Engineering, Chemistry, and Materials Science and Engineering. It is also useful as a reference for Engineers and Chemists working in the synthetic plastics and chemical process industries. This book presents a comprehensive, up-to-date review of the current state of polymer science and technology and emerging areas of growth. In addition to synthetic polymer chemistry, the book also covers the properties of polymers in solutions and in the melt, rubber, and solid states, surveying all important categories of plastics. It includes detailed coverage of both polymer processing principles and the latest polymer applications in a wide range of industries-including medicine, biotechnology, chemicals, and electronics.

## Book Information

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## Customer Reviews

This book addresses the specific needs of chemical engineering students. It also covers basic polymer engineering principles in addition to major polymer chemistry and material topics. --This text refers to the Paperback edition.

At least dozens of good introductory textbooks on polymer science and engineering are now available. Why then has yet another book been written? The decision was based on my belief that none of the available texts fully addresses the needs of students in chemical engineering. It is not that chemical engineers are a rare breed, but rather that they have special training in areas of

thermodynamics and transport phenomena that is seldom challenged by texts designed primarily for students of chemistry or materials science. This has been a frustration of mine and of many of my students for the past 15 years during which I have taught an introductory course, Polymer Technology, to some 350 chemical engineering seniors. In response to this perceived need, I had written nine review articles that appeared in the SPE publication *Plastics Engineering* from 1982 to 1984. These served as hard copy for my students to supplement their classroom notes but fell short of a complete solution. In writing this text, it was my objective to first provide the basic building blocks of polymer science and engineering by coverage of fundamental polymer chemistry and materials topics given in Chapters 1 through 7. As a supplement to the traditional coverage of polymer thermodynamics, extensive discussion of phase equilibria, equation-of-state theories, and UNIFAC has been included in Chapter 3. Coverage of rheology, including the use of constitutive equations and the modeling of simple flow geometries, and the fundamentals of polymer processing operations are given in Chapter 11. Finally, I wanted to provide information on the exciting new materials now available and the emerging areas of technological growth that could motivate a new generation of scientists and engineers. For this reason, engineering and specialty polymers are surveyed in Chapter 10 and important new applications for polymers in separations (membrane separations), electronics (conducting polymers), biotechnology (controlled drug release), and other specialized areas of engineering are given in Chapter 12. In all, this has been an ambitious undertaking and I hope that I have succeeded in at least some of these goals. Although the intended audience for this text is advanced undergraduates and graduate students in chemical engineering, the coverage of polymer science fundamentals (Chapters 1 through 7) should be suitable for a semester course in a materials science or chemistry curriculum. Chapters 8 through 10 intended as survey chapters of the principal categories of polymers commodity thermoplastics and fibers, network polymers (elastomers and thermosets), and engineering and specialty polymers may be included to supplement and reinforce the material presented in the chapters on fundamentals and should serve as a useful reference source for the practicing scientist or engineer in the plastics industry. --This text refers to the Paperback edition.

This is a really nice introduction to polymers, and covers most major topics. It nicely complements the *Intro to Polymers* book by Young and Lovell (also another nice intro book). This book is geared for science majors and engineers. It has some basic math (algebra and a little calculus), and assumes a basic understanding of chemistry and organic chemistry. I also like that it reads well on a Kindle (Kindle PC App and iPad Kindle app). Chemical structures are graphically clear, and the

mathematical equations in the book are readable. Not the best Kindle formatted book I've seen, but not bad.

No examples in text, poor editing. Shoot yourself in the foot instead.

A great text for Materials Chemistry subjects at University. This book displays a great deal of information both calculatory and chemically which complements the text from all levels. Plastics look out!!!!

Good book. Fast shipping

Never used it for class, but the cover is sturdy enough!

I would like to say that this book is rife with examples and explanations, but it isn't. The book is brief to say the least. For what it lacks in actually enhancing the understanding of the reader, it allows you to search google for more comprehensive explanations. I used this book for a polymer engineering course. Perhaps it was the wrong textbook for such a topic as it mostly relates to what a technician would characterize in a lab. I gained little from an engineering perspective.

This textbook provides a good introduction to polymers, their processing, applications, and properties. The book assumes minimal prior knowledge of polymers, and begins with a simple intro to properties such as glass transition temperature, molecular weight, thermoplastic versus thermoset. Electrical, mechanical, and chemical properties of polymers are discussed and related to the structure and composition of the material. The book is organized very well. It includes dedicated chapters on synthesis, processing, degradation, and for the different classes of polymers. Each chapter is short and can stand alone by itself. A short list of references is also provided at the end of each chapter, and these are organized according to the different sections in each chapter. The level of the text is appropriate for juniors or seniors in engineering or chemistry. The math is kept at a simple level; nothing harder than integral calculus, and there are a lot of pictures and diagrams. The amount and scope of information also warrants purchasing this as a general reference for polymers. I recommend this book for those who are learning about, or teaching about polymers.

fast and in time.. the price is cheap and the quality is high. The good thing about this product is that

I can now cut thin slices of my homemade fresh bread! comfortable,nice . my family all need it ,

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