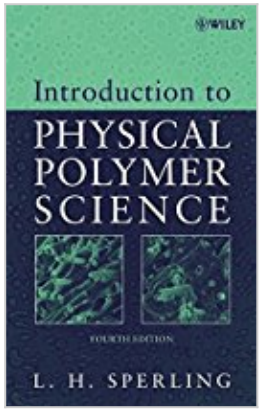

Introduction to Physical Polymer Science

By L. H. Sperling

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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.

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Editorial Review

Review
"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)

From the Publisher
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.

From the Back Cover
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