

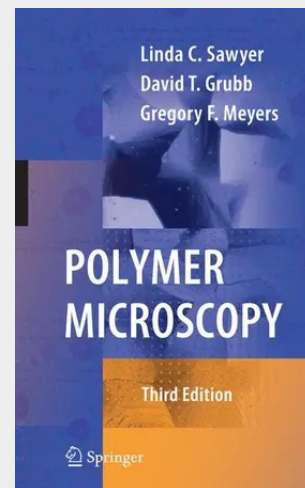
Polymer Microscopy

Third Edition, is a comprehensive and practical guide to the study of the microstructure of polymers, and is the result of the authors' many years of academic and industrial experience. To address the needs of students and professionals from a variety of backgrounds, introductory chapters deal with the basic concepts of both polymer morphology and processing and microscopy and imaging theory. The core of the book is more applied, with many examples of specimen preparation and image interpretation leading to materials characterization. Microscopy is applied to the characterization of a wide range of polymer systems, including fibers, films, engineering resins and plastics, composites, nanocomposites, polymer blends, emulsions and liquid crystalline polymers. Light microscopy, atomic force microscopy, and scanning and transmission electron microscopy techniques are all considered, as are emerging techniques such as compositional mapping in which microscopy is combined with spectroscopy. This extensively updated and revised Third Edition closes with a problem solving guide, which gives a systematic framework for deciding on suitable approaches to the characterization of polymer microstructure.

Key Features:

- Revised and updated, this Third Edition remains the gold standard for information on the characterization of polymer microstructure
- Presents a wide variety of polymer systems and characterization techniques
- Covers the major advances in microscopy and polymers since the publication of the Second Edition in 1996
- Describes new methods for use with the SPM and related to advances in cryo-TEM as well as new polymer materials such as nanocomposites
- Includes both basic and applied topics making this book ideal as a professional reference and as a teaching text

This updated and revised Third Edition is a practical guide to the study of the microstructure of polymers, stemming from the authors' many years of academic and industrial experience. Introductory chapters deal with the basic concepts of polymer morphology and processing as well as microscopy and imaging theory. The core of the book is more applied, with many examples of specimen preparation and image interpretation leading to materials characterization. Readers learn to use microscopy to characterize a wide range of polymer systems, including fibers, films, engineering resins and plastics, composites, nanocomposites, and polymer blends. Light microscopy, atomic force microscopy, scanning and transmission electron microscopy techniques are all discussed. In addition, the book explores emerging microscopy techniques. It closes with a problem-solving guide that provides a systematic framework for choosing a suitable approach to characterize a polymer microstructure.



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