

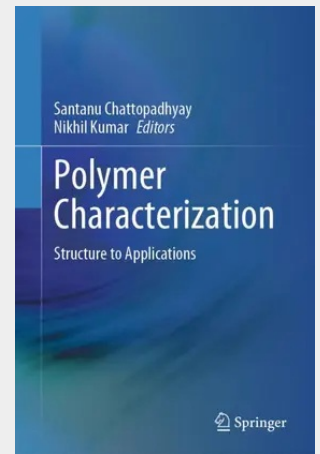
Polymer Characterization

Structure to Applications

This book provides a comprehensive and practical guide to the characterization techniques for understanding the structure, properties, and processing of polymers, elastomers, and composites. It serves as an invaluable resource for students, researchers, and professionals in the fields of materials science, polymer chemistry, chemical engineering, and related disciplines. The main features of this book are:

1. **Integration of Theory and Practice:** It bridges the gap between theoretical principles and practical applications of polymer characterization techniques. Each chapter covers the fundamental principles behind the techniques and provides insights into their real-world applications and relevance in research, development, and quality control.
2. **Comprehensive Coverage:** The book covers a wide range of characterization techniques, including spectroscopic methods (UV-Vis, Infrared, NMR), thermal analysis techniques, surface analysis techniques (XPS, SIMS), and microscopy techniques (optical, AFM, electron microscopy). This comprehensive coverage provides readers with a complete understanding of the various tools for polymer characterization.
3. **Emphasis on Structure-Property Relationships:** Understanding the relationship between polymer structure, properties, and processing is crucial for optimizing material performance and designing new materials with tailored properties. This book highlights how different characterization techniques can elucidate these relationships, enabling readers to make informed decisions in material engineering.
4. **Practical Applications:** Includes numerous real-life examples and case studies illustrating the practical applications of polymer characterization techniques in various industries, such as automotive, aerospace, electronics, health care, and packaging.

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