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Nota di contenuto	Part A Fundamentals -- 1. Concept and Definition of Functional Polymers -- 2. Development of Functional Polyimides -- 3. Biodegradable Polymers -- 4. Biomedical Applications of Polymers -- 5. Dynamic Crosslinked Polymers -- 6. Self-Healing Plastics -- 7. Polymer Informatics -- Part B Conjugated Polymers -- 8. History of Conjugated and Conducting Polymers: Myths and Misconceptions -- 9. Low Bandgap Conjugated Polymers -- 10. Controlled/Living Polymerization Toward Conjugated Polymers -- 11. Conjugated Polymer Synthesis Involving Metathesis -- 12. Conjugated Polymers Containing Main-Group Elements -- 13. Unconventional Building Blocks Towards Novel Conjugated Polymers -- Part C Inorganic Polymers -- 14. Concept and Definition of Inorganic Polymers -- 15. Silicones -- 16. Polyphosphazene Macromolecular Substitution as an Embodiment of Reactive Polymer Science -- 17. Polyphosphazenes for bone regeneration -- 18. Polyphosphazenes from Condensation

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### Sommario/riassunto

The Springer Handbook of Functional Polymers provides a comprehensive overview of the fundamentals and major developments in the field of functional polymers. The handbook is organized into six parts: • Part I offers detailed descriptions of the fundamentals of functional polymers and introduces various types, including bio-related polymers and materials informatics. • Parts II and III, covering conjugated polymers and inorganic polymers, present these materials from the perspective of their building blocks, including information on their synthesis. • Parts IV and V, focusing on photo-functional polymers and electronic polymers, emphasize their functional properties and applications in electronic devices. • Part VI addresses polymers that are important for structural materials. Each part features contributions from internationally renowned experts who are authorities in their respective fields. The chapters provide concise yet authoritative insights into various aspects of functional polymers and their practical applications. This handbook is a valuable resource for researchers and industry professionals from diverse backgrounds who seek a solid understanding of functional polymers. It is also useful for graduate students and educators in related disciplines.

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