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Nota di contenuto	Fullerene Polymers; Foreword; Contents; Preface; Contributors; 1: Fullerene-Containing Polymers: An Overview; 1.1 Polyfullerenes: A Brief History; 1.2 Classification of Polyfullerenes; 1.2.1 All-C60 Polymers; 1.2.2 Organometallic Polymers; 1.2.3 Crosslinked Polymers; 1.2.4 End-Capped Polymers; 1.2.5 C60-Dendrimers; 1.2.6 Star-Shaped Polymers; 1.2.7 Main-Chain Polymers; 1.2.8 Side-Chain Polymers; 1.2.8.1 Double-Cable Polymers; 1.2.9 Supramolecular Polymers; 1.3 Outlook and Perspective; References; 2: Main-Chain and Side-Chain C60-Polymers; 2.1 Introduction; 2.2 Main-Chain Polymers 2.3 Side-Chain Polymers2.3.1 Polystyrene-C60 Polymers; 2.3.2 Polyacrylate-and Methacrylate-C60 Polymers and Copolymers; 2.3.3 Polycarbonate-C60 Polymers; 2.3.4 Aminofishing Side-Chain Polymers; 2.3.5 Polyvinylcarbazoles; 2.3.6 Polyphosphazenes and Polysiloxanes; 2.3.7 Side-Chain C60-Polysaccarides; 2.3.8 Polyether-C60 Polymers; 2.3.9 Side-Chain Polymers Prepared by Organometallic Catalysis; 2.4

Conclusions and Further Perspectives; References; 3: Acrylate and Methacrylate C60-End-Capped Polymers; 3.1 Introduction; 3.2 Synthesis of C60-End-Capped Polymers
3.2.1 General Synthetic Approaches for C60-Containing Polymers
3.2.2 Well-Defined C60 End-Capped Polymers by Controlled Radical Polymerization; 3.3 Aggregation of C60-End-Capped Polymers in Solution; 3.3.1 Self-Assembly of C60-End-Capped Polymers in Organic Solvents; 3.3.2 Aggregation of C60-End-Capped Polymers in Aqueous Solution; 3.3.2.1 pH-Responsive C60-Containing Polymers; 3.3.2.2 Temperature-Responsive C60-Containing Polymers; 3.3.2.3 C60-Containing Polyampholytes; 3.3.2.4 Supramolecular Fractal Patterning; 3.3.2.5 Surfactant Induced Nano-Structures; 3.4 Summary; References
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4.1 Introduction; 4.2 Synthesis and Properties of Double-C60-End-Capped Polymers; 4.3 Mechanical Properties of Pseudo-SIPNs; 4.3.1 FPEOF/PMMA Pseudo-SIPNs; 4.3.2 FPEOF/Poly(L-Lactic Acid)Pseudo-SIPNs; 4.3.3 FPBMAF/PVC Pseudo-SIPNs; 4.4 Optical Transmission Characteristics of Pseudo-SIPNs; 4.5 Conclusions; References
5: Star-Shaped Polymers with a Fullerene Core; 5.1 Introduction; 5.2 Grafting of Linear Polymer Chains onto C60; 5.2.1 Grafting via Radicals; 5.2.1.1 Radical Copolymerization of Fullerenes with Vinyl Monomers
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5.2.1.3 Addition of Macro-radicals Obtained by Cleavage of Macro-initiators; 5.2.2 Grafting via Nucleophilic Addition; 5.2.2.1 Grafting of Neutral Nucleophiles; 5.2.2.2 Grafting of Charged Nucleophiles; 5.2.3 Other Grafting Reactions; 5.3 Polymerization of a Monomer Using Charged or Functionalized Fullerenes as Initiators; 5.3.1 Controlled Radical Polymerization Using a C60(X)_n as Initiator
5.3.2 Anionic Polymerization Initiated by Fullerenes C60_x-(M⁺)_x or "Living" Polymer Stars with a Fullerene Core (Polymer)_x C60_x-(M⁺)_x (x 6

Sommario/riassunto

Written by an outstanding team of experts in the interdisciplinary areas of research, this book is based on a new classification of the different types of fullerene polymers according to their chemical structures. It covers all aspects, from different classes, to their synthesis and applications in material science. Of great interest to polymer and synthetic chemists, but also for material scientists and industrial chemists.
