

1. Record Nr.	UNINA9911019808403321
Titolo	Half-century of metal- and metalloid-containing polymers // Alaa S. Abd-El-Aziz ... [et al.]
Pubbl/distr/stampa	Hoboken, N.J., : Wiley-Interscience, c2003
ISBN	9786610343867 9781280343865 1280343869 9780470244432 0470244437 9780471466581 0471466581 9780471466598 047146659X
Descrizione fisica	1 online resource (280 p.)
Collana	Macromolecules containing metal and metal-like elements, , 1545-438X ; ; v. 1
Altri autori (Persone)	Abd-El-AzizAlaa S
Disciplina	547/.7
Soggetti	Macromolecules Organometallic compounds Organometallic polymers
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and indexes.
Nota di contenuto	Macromolecules Containing Metal and Metal-Like Elements Volume 1; Contents; Preface; 1. Introduction; I. Historical Background; A. Polymers Containing Silicon; B. Metal Coordination Polymers; C. Organometallic Polymers; II. Structures and Bonding; A. Metals or Metalloids in the Backbone; B. Metals or Metalloids in the Sidechain; C. Transition Metals Coordinated to the Backbone; D. Branched Polymers; III. Synthetic Methodologies; A. Step-Growth Polymerization; B. Chain-Growth Polymerization; C. Ring-Opening Polymerization; D. Metal Coordination; IV. Summary; V. References 2. Metallocene-Based PolymersI. Introduction; II. Sidechains; A. Vinyl, Acrylate, and Acrylamide Polymers; B. Pyrrole and Thiophene Polymers; C. Polyaspartamide; D. Polyferrocenophanes; E. Polyacetylenes; F.

Polynorbornenes; G. Polyphosphazenes; H. Polysilanes; III. Homoannular Polymetalloenes; IV. Heteroannular Polymetalloenes; A. Polyferrocenylenes; B. Polyamides, Polyurethanes, Polyureas, Polyesters, and Polybenzimidazoles; C. Metal or Metalloid Spacers; D. Conjugated Systems; E. Coordination Polymers; F. Ferrocenophane-Based Polymers; V. Multidecker Polymers
 VI. Hyperbranched and Crosslinked Polymers VII. Stars and Dendrimers; VIII. Summary; IX. References; 3. Polymers Containing 4-, 5-, and 6-Membered Rings p-Coordinated to Metallic Moieties; I. Introduction; II. Polymers Containing Arene Complexes; A. Pendent to the Backbone; B. Sidechain; C. Supramolecular Assemblies; D. Dendrimers and Stars; III. Polymers Containing Complexed 5-Membered Rings; A. Cyclopentadienylmetal Carbonyl Complexes; B. Complexation of Silole Rings; C. Dendrimers; IV. Polymers Containing Cyclobutadiene Complexes; V. Summary; VI. References
 4. s-Bonded Metals and Metal-Metal Bonds in the Polymer Framework I. Introduction; II. Metal s Bonds; A. Metal-Oxygen, Metal-Sulfur, and Metal-Nitrogen Bonds; B. Metal-Aryl Bonds; C. Metallacyclopentadienes; D. Metal Acetylides; III. Metal-Metal Bonds; IV. Stars and Dendrimers; V. Summary; VI. References; 5. Metal Coordination Polymers; I. Introduction; II. Schiff Base Polymers; III. Porphyrins; IV. Phthalocyanines; V. Pyridine and Related Systems; A. Bi- and Terpyridine-Based Materials; B. Catenanes, Rotaxanes, and Calixarenes; C. Benzimidazoles; D. Dendrimers and Stars; VI. Summary VII. References
 6. Silicon-, Germanium-, Tin-, and Lead-Containing Polymers; I. Introduction; II. Silicon; A. Polysilylenes (Polysilanes); B. Polycarbosilanes; C. Polysilazanes; D. Polysiloxanes; E. Polysilsesquioxanes; III. Germanium; IV. Tin; V. Lead; VI. Summary; VII. References; Subject Index; Metals Index

Sommario/riassunto

Metal- and metalloid-containing macromolecules are defined as large molecules (i.e., polymers, DNA, proteins) that contain a metal or metalloid group affiliated with the molecule. The first volume in this series consists of a number of reviews of the field, to give the reader a background to build upon. Compiled by an all-star cast of macromolecular experts, this guide: Provides useful descriptions of applications for the reader to apply in his/her research into materials, polymers, and medicine/drug development. Covers non-linear optical materials, speciality magnetic materials, liq