1. Record Nr. UNINA9911019804503321

Titolo	Nanoscale interactions of metal-containing polymers / / edited by Alaa S. Abd-El-Aziz ... [et al.]
Pubbl/distr/stampa	Hoboken, NJ, : Wiley-Interscience, c2006
ISBN	9786610286997 9781280286995 1280286997 9780470244456 0470244453 9780471773269 0471773263 9780471773252 0471773255
Descrizione fisica	1 online resource (252 p.)
Collana	Macromolecules containing metal and metal-like elements, , 1545-438X ; ; v. 7
Altri autori (Persone)	Abd-El-AzizAlaa S
Disciplina	547.7
Soggetti	Organometallic polymers Nanostructured materials Macromolecules Metal complexes
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 (p. 198-220) and index.
Nota di contenuto	Macromolecules Containing Metal and Metal-Like Elements Volume 7; Contributors; Contents; Preface; Series Preface; 1. Nanocluster Assemblies and Molecular Orbital Interactions in Macromolecule-Metal Complexes; I. Introduction; II. Methodology of Transition Metal Coordination in Polymeric Complexes; A. Polymeric Coordination Complexes with d-Block Salts that Exhibit an Increase in T(g); B. Chemical Bonding, Coordination, and Transition Metal Compatibilization; i. Ligand Field Stabilization Energy Description of the Enhancement in T(g) for Polymeric Complexes with Transition Metals ii. Energetic Ligand Field Models and the Methodology of Transition

Metal CoordinationC. Well-Defined Low-Molecular-Weight Transition Metal Complexes that Increase T(g); D. Attractive Polymeric Ligands; E. Identifying Attractive Interactions via Hard and Soft Acids and Bases; F. Displacement of Weak Neutral Bases in the First-Shell Coordination Sphere by Stronger Bases; i. Anionic Ligands are the Last Ones that Should Be Displaced to the Second Shell; G. Complexes with the Same Local Symmetry Above and Below the Glass Transition; i. Complexes with Reduced Symmetry Above T(g)
H. Consideration of Interelectronic Repulsion and Ligand Field Splitting When There Is Ambiguity in the d-Electron ConfigurationIII. Jørgensen's Parametric Representation of Ligand Field Splitting and Interelectronic Repulsion; A. Polymeric Complexes with Enhanced Glass-Transition Temperatures; B. Polymeric Complexes with Reduced Glass-Transition Temperatures; C. Other Considerations; IV. Pseudo-Octahedral d(8) Nickel Complexes with Poly(4-vinylpyridine); A. Ligand Field Stabilization Energies; B. Coordination Crosslinks vs. Coordination Pendant Groups
C. Ligand Field Model of the Glass Transition in Macromolecule-Metal ComplexesD. Linear Least Squares Analysis of D(LFSE) via the Concentration Dependence of T(g) in P4VP/Ni(2+) Complexes, Subject to the Constraint that b 1; V. d(6) Molybdenum Carbonyl Complexes with Poly(vinylamine) that Exhibit Reduced Symmetry Above the Glass-Transition Temperature; A. Experimental Results; B. Ligand Field Splitting Parameters for Molybdenum Hexacarbonyl; C. Ligand Field Stabilization for Complexes of Molybdenum Hexacarbonyl and Poly (vinylamine) in the Glassy State
D. Quantum Mechanical Model Parameters and Trigonal Bipyramid 5-Coordinate d(6) Complexes of Molybdenum Hexacarbonyl and Poly (vinylamine) with D(3h) Symmetry Above T(g)E. Square Pyramid 5-Coordinate d(6) Complexes of Molybdenum Hexacarbonyl and Poly (vinylamine) with C(4v) Symmetry Above T(g); F. Pentagonal Planar 5-Coordinate d(6) Complexes of Molybdenum Hexacarbonyl and Poly (vinylamine) with D(5h) Symmetry Above T(g); G. Ligand Field Stabilization of 5-Coordinate d(6) Complexes of Molybdenum Hexacarbonyl and Poly(vinylamine) Above T(g)
VI. Cobalt, Nickel, and Ruthenium Complexes with Poly(4-vinylpyridine) and Poly(L-histidine) that Exhibit Reduced Symmetry in the Molten State

Sommario/riassunto

This series provides a useful, applications-oriented forum for the next generation of macromolecules and materials. This volume, seventh in the series, covers nanoscale interactions of metal-containing polymers. Example chapters include:* Nanoscale Clusters and Molecular Orbital Interactions in Macromolecular-Metal Complexes* Metal Oxide Clusters as Building Blocks for Inorganic-Organic Hybrid Polymers