Inorganic Syntheses. Inorganic Syntheses V33. Volume 33

Description: New procedures and compounds for students and professionals in the field of inorganic chemistry

The Inorganic Syntheses series provides all users of inorganic substances with detailed and foolproof procedures for the preparation of important and timely compounds. In Volume 33, editor Dimitri Coucouvanis collects syntheses that present new or revised experimental procedures that are applicable to a variety of related compounds, as well as syntheses of individual compounds that are of interest or importance. Chapter topics are comprised of syntheses of selected supramolecules, useful reagents/ligands, solid state materials/clusters, and compounds of general interest, including mesityl-gold(I) complexes and zero valent binuclear nickel complexes, among many others.

All the syntheses presented have been tested. Inorganic, organic, and organometallic chemists, as well as materials scientists, instructors, and graduate students will find the research, methods, and compounds contained here invaluable to their scientific pursuits.

Contents:

Chapter One SYNTHESSES OF SELECTED SUPRAMOLECULES.
1. Toward Magnetic Building Blocks: Synthesis of a Planar Co(III) cation Radical cobalt(III) Complex of the Binucleating Ligand 1,2,4,5-Tetrakis(2-hydroxy-2-methylpropanamido)benzene.
3. Dodecatungstoaluminic Acid and Its Monolacunary and Mixed-Addendum Derivatives.
4. Supramolecular Complexes of BisBis(2,2′-bipyridine)osmium(II) and Ruthenium(II).
5. Binuclear Oxomolybdenum Metalloporphyrin Complexes.
7. Dipyrryl and Porphyrinic Precursors to Supramolecular Conjugated (Porphinato)metal Arrays: Syntheses of Dipyrrylmethane and (5,15-diphenylporphinato)zinc(II).
8. Synthesis of Dodecaoxohexadecacarboxylatoaquo-dodecamanganese [Mn12O12(O2CR)16(H2O)4] (R = Me, Et, Ph, Cr) Complexes.
10. Use of Salicyl- and Naphthoylhydroximate Complexes in Preparation of Manganese and Copper 12-Metallacrown-4 Complexes: Mn(II)(Acetate)2 [Mn(III)(salicylhydroximate)]4 and (Tetramethylammonium)2 [Cu(II)5(naphthoylhydroximate)4].

Chapter Two USEFUL REAGENTS AND LIGANDS.
11. Homoleptic Transition Metal Acetonitrile Cations with Tetrafluoroborate or Trifluoromethanesulfonate Anions.
13. Transition Metal p-Toluenesulfonates.
15. Tetraethylammonium–Tetrathioperrhenate $\text{Et}_4\text{N(ReS}_4)$.
16. Large-Scale Synthesis of Methyltrioxorhenium (CH$_3\text{ReO}_3$).
17. 4,5-Diaminocatechol: A Useful Building Block in Synthesis of Multimetallic Complexes.
18. A Convenient Synthesis of 1,5,9-Trithiacyclododecane (S$_3$H$_{18}$).

Chapter Three SOLID–STATE MATERIALS AND CLUSTERS.

19. Synthesis of Quaternary Selenophosphates using Molten Salt Fluxes: Rb$_8$Hg$_4$(Se$_2$P$_4$)$_2$, K$_4$In$_2$(PSe$_5$)$_2$(P$_2$Se$_6$), Rb$_4$Ti$_2$(P$_2$Se$_7$)(P$_2$Se$_9$)$_2$, Rb$_4$U$_4$(Se)$_2$(Se$_2$)$_4$(PSe$_4$)$_4$.

20. Hydrothermal Synthesis of Sulfosalts: Ag$_3$AsS$_3$, Ag$_3$SbS$_3$, Ag$_7$Sb$_4$S$_{13}$, CuInS$_2$, FeIn$_2$S$_4$.

22. Sulfur–Bridged Incomplete Cubane-Type Molybdenum and Tungsten Aqua Ions.
23. Sulfur–Bridged Cubane Type Mixed-Metal Clusters with Mo
3 MS
4 (M = Fe,Co,Ni,Cu,In,Sn) and W
3 NiS
4 Cores.
24. Molybdenum and Tungsten Clusters as Aqua Ions [M
3 Q
4 (H
2 O)
9 ]
4+ (M = Mo,W; Q = S,Se) and Related Chalcogen–Rich Trinuclear Clusters.

Chapter Four COMPOUNDS OF GENERAL INTEREST.

25. The Diphénylmethylenethiophosphinate (MTP) Ligand in Gold(I), Platinum(II), Lead(II), Thallium(I), and Mercury(II) Complexes,
sym –Au
2 (MTP)
2 , (PPN)[Au(MTP)
2 ], Au
2 Pt(MTP)
4 , Au
2 Pb(MTP)
4 , AuTl(MTP)
4 , Hg(MTP)
2 , Hg(MTP)
2 (AuCl)
2 , and Hg
II Au
I (MTP)
2 Au
III
I4 .
27. An Improved Synthesis of
cis –Dithiocyanato–bis(4,4′–dicarboxy–2,2′–bpy) Ru(II) Sensitizer.
28. Dimethylsulfoxide Complexes of Platinum(II): K[PtCl
3 (Me
2 SO)],
cis –[PtCl
2 L(Me
2 SO)] (L = Me
2 SO,MeCN), [PtCl(–Cl)(Me
2 SO)]
2 , and [Pt(Me
2 SO)
4 ](CF
3 SO
3 )
2 .
29. Tetrasulfur–tetranitride (S
4 N
4 ).
30. Hydrotris(methimazolyl)borate.
31. Arsenic(III)bromide.
32. Dichlorodioxo–bis(triphenylphosphine oxide)uranium(VI) [UO
2 I2 (OPPh
3 )
2 ].
33. Chlorohydro–tris(pyrazol–1–yl)borato–bis(triphenylphosphine) ruthenium(II) {RuCl[ k
3 –HB(pz)](PPh
3 )}. 
3) (pz = pyrazol-1-yl).

34. Octacarbonyldihydridodirhenium [Re2(H)2(CO)8].

35. Zero-Valent Binuclear Nickel Complexes.

36. Preparation of a Synthetic Ribonuclease: The Europium(III) Complex of 1-(4-nitrobenzyl)-4,7,10-Tris(carbamoylmethyl)-1,4,7,10-tetraazacyclododecane.


38. A Luminescent Complex of Re(I): fac- [Re(CO)3(bpy)(py)](CF3SO3) (bpy = 2,2'-bipyridine; py = pyridine).

39. RSi(OH)3 and RSi(NH2)3 [R = 2,6-iPr6H3N(SiMe3)]: Synthesis of Stable Organosilanes with Three Functional Groups.

40. Fluorination with MeSnF: Synthesis of Cyclopentadienyl-Substituted Group 4 Metal Fluoride Complexes.

41. Seven-Coordinate [MI2(CO)3(NCMe)2], [MI2(CO)3(NCMe)(PPh3)], and Alkyne [MI2(CO)(NCMe)(2-R)] Complexes of Molybdenum(II) and Tungsten(II).

42. Chlorothiocarbonylbis(triphenylphosphine)iridium(I) [IrCl(CS)2PPh3].

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