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Contents

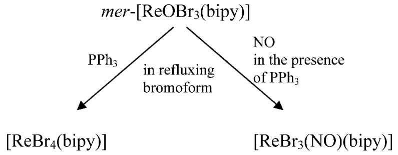
Papers

**Barbara Machura, J.O. Dzięgielewski,
R. Kruszynski, T.J. Bartczak, J. Kusz**

Polyhedron 22 (2003) 2573

The reactivity of *mer*-[ReOBr$_3$(bipy)] towards gaseous nitric oxide. The crystal, molecular and electronic structure of *mer*-[ReOBr$_3$(bipy)] and [ReBr$_4$(bipy)]

Gaseous nitric oxide reacts with *mer*-[ReOBr$_3$(bipy)] (**1**) in the presence of large excess of triphenyphoshine in refuxing bromoform to give [ReBr$_3$(NO)(bipy)] (**3**), whereas the reaction of **1** with PPh$_3$ in refluxing CHBr$_3$ leads to the isolation of [ReBr$_4$(bipy)] (**2**). The complexes **1**, **2** and **3** have been characterised by IR, UV–Vis and magnetical measurements. Crystal and molecular structures have been determined for **1** and **2**.

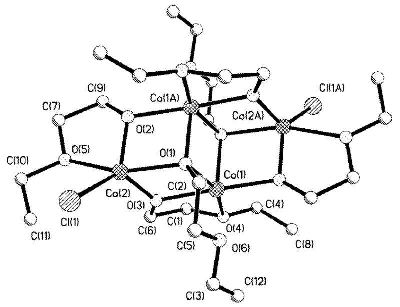


**Gulaim A. Seisenbaeva, Mikael Kritikos,
Vadim G. Kessler**

Polyhedron 22 (2003) 2581

Synthesis, X-ray single crystal and magnetic study of new heteroleptic late transition metal alkoxides with tetranuclear square planar metal core, $Co_4Cl_2(OC_2H_4OEt)_6$, $Co_4(OMe)_2(acac)_6(MeOH)_2$ and $Zn_4(OMe)_2(acac)_6(C_7H_8)$

Synthesis of tetranuclear late transition metal alkoxide complexes $Co_4Cl_2(OC_2H_4OEt)_6$ (**1**), $Co_4(OMe)_2(acac)_6(MeOH)_2$ (**2**) and $Zn_4(OMe)_2(acac)_6(C_7H_8)$ (**3**) is reported. Their structures contain analogous planar tetranuclear cores of $M_4(\mu_3\text{-}OR)_2(\mu_2\text{-}OR)_4$ type ($[Ti(OMe)_4]_4$ type structure). The magnetic measurements revealed competing ferromagnetic and antiferromagnetic interactions between the **4** Co(II) atoms in **1**, but only ferromagnetic in **2**.

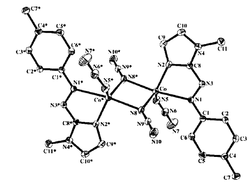


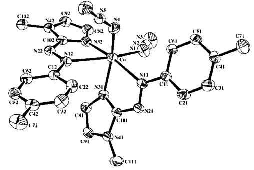
**Umasankar Ray, Brojogopal Chand,
Golam Mostafa, Jack Cheng,
Tian-Huey Lu, Chittaranjan Sinha**

Polyhedron 22 (2003) 2587

Mono- and binuclear cobalt(II)-azido complexes of arylazoimidazole: synthesis, spectral characterization, electrochemistry and crystal structure

On setting up proper reaction conditions, Co(OAc)$_2$, RaaiR′ and NaN$_3$ in methanolic solution give two classes of azido complexes—one is mononuclear bis chelated [Co(RaaiR′)$_2$(N$_3$)$_2$] and the other is binuclear (μ-1,1) azido bridged monochelated [Co(RaaiR′)(μ-(1)N$_3$)(μ-(1,1)N$_3$]$_2$.





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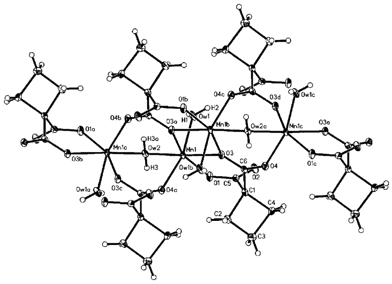
Zofia Rzaczynska, Agata Bartyzel, Tadeusz Głowiak

Polyhedron 22 (2003) 2595

Synthesis and characterization of triaqua-bis(1,1-cyclobutanedicarboxylato-O,O′,O″,O‴)dimanganese(II)

The manganese(II) complex, $[Mn_2(C_6H_6O_4)_2(H_2O)_3]$ was synthesized and characterized by X-ray crystallography, IR spectra and thermal analysis. The water molecule and two carboxylate groups from two different ligands link the dimeric units, yielding infinite chains. Each manganese(II) cation is surrounded by four carboxylate oxygen atoms from three different 1,1-cyclobutanedicarboxylic anions and by two water oxygen atoms.

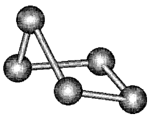


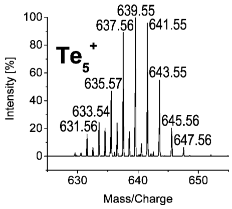
M. Alberti, O. Šedo, J. Havel

Polyhedron 22 (2003) 2601

Laser ablation synthesis and TOF mass spectrometric identification of tellurium, sulfur and mixed tellurium–sulfur clusters

Several mixed clusters, $TeS_m (m = 1-14)$, $Te_2S_m (m = 1-10)$, $Te_3S_m (m = 1-6)$ and $Te_4S_m (m = 1-2)$, and $Te_n (n = 1-6)$ or $S_m (m = 1-15)$ clusters were synthesized via laser ablation of elements or tellurium–sulfur mixtures. The stoichiometry was determined using time of flight mass spectrometry. Both, negatively and positively singly charged clusters were observed.



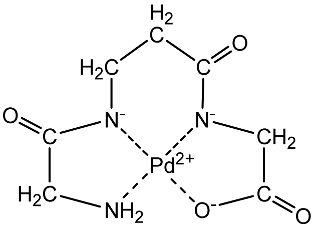


Csaba Gábor Ágoston, Zsombor Miskolczy, Zoltán Nagy, Imre Sóvágó

Polyhedron 22 (2003) 2607

The effect of ring size of fused chelates on the stability constants and spectroscopic properties of nickel(II) and palladium(II) complexes of peptides

The destabilizing effect of the N-terminal β-alanyl residues was observed in all cases. The inclusion of β-alanine into the internal or C-terminal positions of tripeptide molecules significantly enhances the thermodynamic stability of palladium(II) complexes.

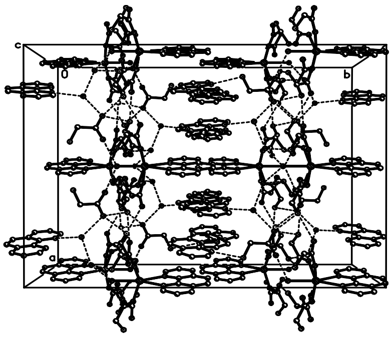


Xiang-Jun Zheng, Lin-Pei Jin

Polyhedron 22 (2003) 2617

Supramolecular architectures from the self-assembly of lanthanide coordination compounds containing glycine and phen via hydrogen bonding and π–π stacking interactions

Abundant hydrogen bonding and π–π stacking interactions make the lanthanide complexes of glycine with phen form 1D, 2D and 3D supramolecular architectures.

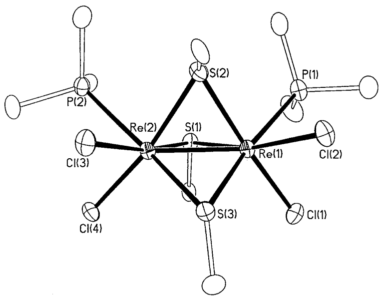


Christopher P. Chaney, Lori E.T. Hibbard, Keri T. Horne, Tiffeny L.C. Howe, Gregory L. Powell, Derek W. Thurman

Polyhedron 22 (2003) 2625

Preparation and crystal structures of dirhenium face-sharing bioctahedral complexes $Re_2(\mu\text{-}SR)_3X_4(PR_3)_2$, R = methyl, ethyl or phenyl, and X = Cl or Br

Face-sharing bioctahedral complexes with the general formula $Re_2(\mu\text{-}SR)_3X_4(PR_3)_2$ (R = methyl, ethyl or phenyl; X = Cl or Br) are produced when compounds of the type $Re_2X_4(PR_3)_4$ and $Re_2X_5(PR_3)_3$ react with organic disulfides (RSSR).

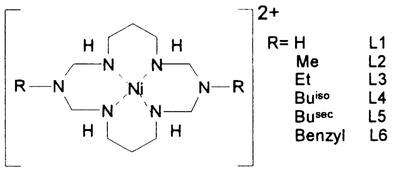


M. Salavati-Niasari, H. Najafian

Polyhedron 22 (2003) 2633

One-pot template synthesis and properties of Ni(II) complexes of 16-membered hexaaza macrocycles

A new nickel(II) complex of the 16-membered hexaaza macrocyclic ligand has been prepared by the one-pot template reactions of formaldehyde and propylenediamine with alkyl and benzyl amine in the presence of nickel(II) ion. The complexes of a hexaaza macrocycle have been characterized by elemental analyses, IR, UV–Vis and ^{13}C NMR spectroscopy, conductometric and magnetic measurements.

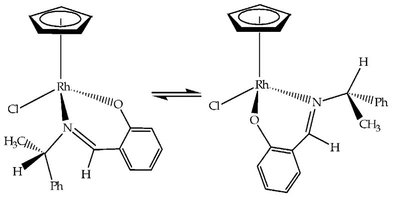


Henri Brunner, A. Köllnberger, Manfred Zabel

Polyhedron 22 (2003) 2639

Optically active transition metal complexes. Part 133. Preparation, epimerization and crystallization of chiral-at-metal rhodium-(III) half-sandwich complexes

Four rhodium (Cp*Rh(beapy)Cl, Cp*Rh-(pepy)Br, Cp*Rh(pepy)I and CpRh(pesa)-Cl) and one iridium complexes (Cp*Ir-(beapy)Cl) with three legged piano-stool-geometry were synthesized. The configuration of the chiral metal center could be determined by crystal structure analyses. In solution these compounds epimerize even at low temperatures. The half-lifes of the epimerization and racemization reactions were calculated by NMR studies and coalescence measurements.

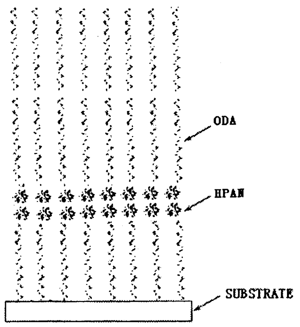


Li-Feng Zhong, Yuan-Ming Zhang, Yu Tang, Yan Bai

Polyhedron 22 (2003) 2647

Synthesis and characterization of Keggin P–Mo–V heteropolyanion and its Langmuir–Blodgett film

The divanadium-substituted molybdophosphate acid, $H_5PMo_{10}V_2O_{40}\cdot 13H_2O$ was synthesized by acidification-etherate. A LB film with $PMo_{10}V_2O_{40}^{5-}$ in the subphase was formed. AFM, LAXD, FT-IR and UV spectroscopy were used to investigate the morphology and molecular structure of the deposited $ODA/PMo_{10}V_2O_{40}^{5-}$ LB film. The cyclic voltammetric behavior of the $PMo_{10}V_2O_{40}^{5-}$ heteropolyanion and the LB film were studied.

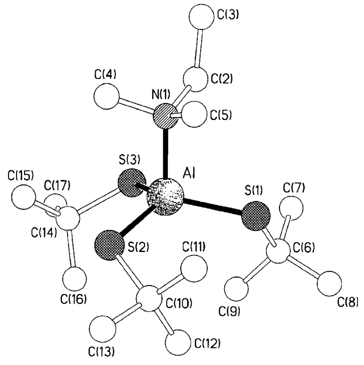


Claire J. Carmalt, John D. Mileham, Andrew J.P. White, David J. Williams, Simon Rushworth

Polyhedron 22 (2003) 2655

Synthetic and structural studies on aluminium thiolate complexes

Four new thiolate complexes of aluminium(III), namely $[Al(S-t-Bu)_3(NMe_2Et)]$ (pictured), $[Al(SC_6H_3Me_2\text{-}2,6)_3(OEt_2)]$, $[HNMe_2Et][Al(SC_6H_3Me_2\text{-}2,6)_4]$ and $[Li(OEt_2)_3][Al(SC_6H_3Me_2\text{-}2,6)_4]$ have been synthesised and structurally characterised. These complexes were prepared from the reaction of $[AlH_3 \cdot L]$ with t-BuSH or $2,6\text{-}Me_2C_6H_3SH$.



Da-Hua Hu, Wei Huang, Shao-Hua Gou, Jiang-Lin Fang, Hoong-Kun Fun

Polyhedron 22 (2003) 2661

Synthesis, characterization and magnetic properties of a dinuclear complex $[Cu(2,2'\text{-}bpy)(HL)(L)]_2(NO_3)_2\cdot(H_2O)_{3/2}$ and a 1D chain $\{[Cu(2,2'\text{-}bpy)(4,4'\text{-}bpy)_{1/2}(L)](ClO_4)\cdot(1/2H_2O)\}_n$ (L is p-aminobenzoate)

Copper(II)-directed self-assembly led to a dinuclear complex and a 1D chain with empirical formula $[Cu(2,2'\text{-}bpy)(HL)(L)]_2\text{-}(NO_3)_2\cdot(H_2O)_{3/2}$ (**1**) and $\{[Cu(2,2'\text{-}bpy)(4,4'\text{-}bpy)_{1/2}(L)]\ (ClO_4)\cdot(1/2H_2O)\}_n$ (**2**) (L is p-aminobenzoate), respectively. X-ray single crystal structural analyses indicated that the $[Cu_2(2,2'\text{-}bpy)_2(L)_2]$ unit was present in both compounds. The geometry of each copper(II) ion in the two compounds is distortedly pyramidal, where two nitrogen atoms from one 2,2′-bpy and two oxygen atoms from two different p-aminobenzoate constitute the pyramidal base, and one nitrogen atom of p-aminobenzoic acid (**1**) or 4,4′-bipyridine (**2**) takes the apical position. The magnetic behavior of both compounds has been investigated.