



PERGAMON

Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

SCIENCE @ DIRECT®

Volume 22, Number 12, 15 June 2003



POLYHEDRON

[www.elsevier.com/locate/poly](http://www.elsevier.com/locate/poly)

## Contents

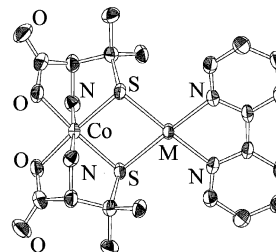
### Papers

**Yasunori Yamada, Mamoru Uchida,  
Mitsuharu Fujita, Yoshitaro Miyashita,  
Ken-ichi Okamoto**

*Polyhedron 22 (2003) 1507*

Optically active sulfur-bridged Co(III)–M(II) (M = Pd, Pt) dinuclear complexes with square-planar  $[M(\mu-S)_2(bpy)]$  (bpy = 2,2'-bipyridine) frameworks derived from octahedral bidentate sulfur-donating Co(III) metalloligands

The optically active S-bridged dinuclear complexes,  $[M(bpy)\{Co(D-pen)_2\}]^+$  (M = Pd<sup>II</sup>, Pt<sup>II</sup>; bpy = 2,2'-bipyridine, D-pen = D-penicillamine) and  $\Delta\Delta-[M(bpy)\{Co(aet)_2(R-pn)\}]^{3+}$  (aet = 2-aminoethanethiolate, pn = 1,2-propanediamine) were obtained by the reactions of  $[MCl_2(bpy)]$  with *trans*(N)- $[Co(D-pen)_2]^-$  and  $\Delta\Delta$ - $[Ni\{Co(aet)_2(R-pn)\}_2]^{4+}$ , respectively. Some spectrochemical properties of these complexes were discussed in relation to the X-ray crystal structures.

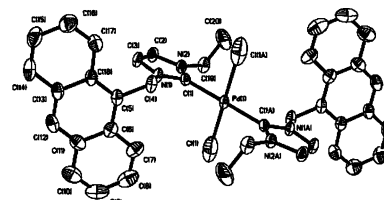


**Qing-Xiang Liu, Hai-Bin Song, Feng-Bo Xu,  
Qing-Shan Li, Xian-Shun Zeng,  
Xue-Bin Leng, Zheng-Zhi Zhang**

*Polyhedron 22 (2003) 1515*

Synthesis, crystal structure and photophysical properties of *N*-heterocyclic carbene Pd(II), Pt(II) complexes and iodine adduct

1-(9-Anthracenylmethyl)-3-ethylimidazolium iodide (**1**) is treated with PdCl<sub>2</sub>, Pt(cod)Cl<sub>2</sub> or iodine to afford [1-(9-anthracenylmethyl)-3-ethylimidazol-2-ylidene]<sub>2</sub>PdCl<sub>2</sub> (**2**), [1-(9-anthracenylmethyl)-3-ethylimidazol-2-ylidene]<sub>2</sub>PtCl<sub>2</sub> (**3**), on [1-(9-anthracenylmethyl)-3-ethylimidazol-2-ylidene I]<sup>+</sup> I<sub>3</sub><sup>-</sup> (**4**), respectively. In CH<sub>2</sub>Cl<sub>2</sub> solution **1** is transformed into 1-(9-anthracenylmethyl)-3-ethylimidazol-2-ylidene chloride (**5**).

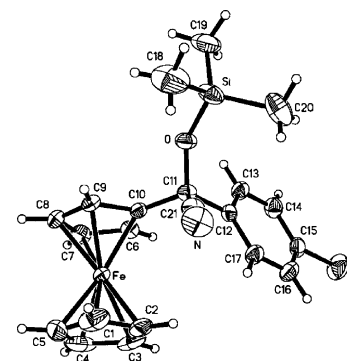


**Zhan-Xi Bian, Hai-Ying Zhao,  
Bao-Guo Li**

*Polyhedron 22 (2003) 1523*

Synthesis of cyanohydrin trimethylsilyl ethers of acylferrocenes

The addition of trimethylsilyl cyanide to acylferrocenes FcCOR (R = Me, Et, <sup>*n*</sup>Pr, <sup>*i*</sup>Pr, Ph, *p*-MeOC<sub>6</sub>H<sub>4</sub>, *o*-ClC<sub>6</sub>H<sub>4</sub>, *m*-ClC<sub>6</sub>H<sub>4</sub>, *p*-ClC<sub>6</sub>H<sub>4</sub>, Fc; Fc = C<sub>5</sub>H<sub>4</sub>FeC<sub>5</sub>H<sub>5</sub>) catalyzed by zinc iodide in methylene chloride provided the corresponding cyanohydrin trimethylsilyl ethers in moderate to high yields. Factors affecting the reaction and yields of adducts were investigated.

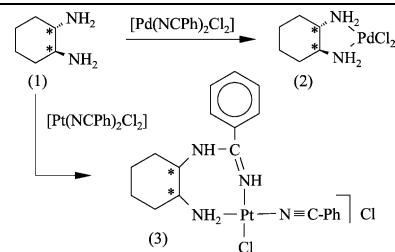


**Adnan S. Abu-Surrah, Talal A.K. Al-Allaf, Martti Klinga, Markku Ahlgren**

*Polyhedron* 22 (2003) 1529

Chiral palladium(II) and platinum(II) complexes of diaminocyclohexane: X-ray structures of (1*R*,2*R*)-(–)-1,2-diaminocyclohexane dihydrochloride and its corresponding oxalato platinum(II) complex

The reaction of the ligand (1*R*,2*R*)-(–)-1,2-diaminocyclohexane (DACH) with *cis*-[(PhCN)<sub>2</sub>MCl<sub>2</sub>] (M = Pd, Pt) leads to the formation of the complexes [(DACH)PdCl<sub>2</sub>] and [(PhC=NH–NH(C<sub>6</sub>H<sub>10</sub>)NH<sub>2</sub>)Pt(N≡CPh)Cl]Cl, respectively. The aqua and oxalato derivatives [(DACH)Pd(H<sub>2</sub>O)<sub>2</sub>](NO<sub>3</sub>)<sub>2</sub>, [(DACH)Pd(C<sub>2</sub>O<sub>4</sub>)] and [(DACH)Pt(C<sub>2</sub>O<sub>4</sub>)] have also been prepared. The solid state structures of the ligand (DACH·2HCl) and the complex [(DACH)Pt(C<sub>2</sub>O<sub>4</sub>)] have been determined by X-ray structure analysis. The result indicates that the complex contains both the *trans*-(–)-1*R*,2*R* and *trans*-(+)-1*S*,2*S* isomers.

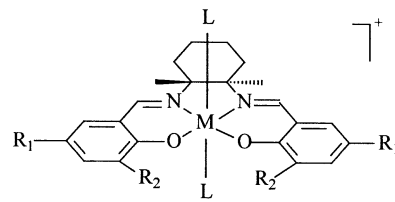


**Yu-Ling Zhang, Wen-Juan Ruan, Xiao-Jing Zhao, Hong-Gen Wang, Zhi-Ang Zhu**

*Polyhedron* 22 (2003) 1535

Synthesis and characterization of axial coordination cobalt(III) complexes containing chiral Salen ligands

Several chiral Schiff base cobalt(III) complexes [CoSBL<sub>2</sub>]ClO<sub>4</sub> (SB = Salen, MeOSalen, *t*-Bu-Salen; L = Im, 2-MeIm, MeIm) have been prepared and characterized by FT-IR, UV-Vis, CD and <sup>1</sup>H NMR spectra. The crystal structures of [Co(Salen)-(MeIm)<sub>2</sub>]ClO<sub>4</sub> (**1c**), [Co(MeOSalen)-(MeIm)<sub>2</sub>]ClO<sub>4</sub> (**2c**), [Co(*t*-Bu-Salen)-(MeIm)<sub>2</sub>]ClO<sub>4</sub> (**3c**) have been determined by X-ray structure analysis.



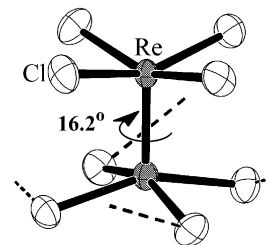
1. Salen, R<sub>1</sub> = R<sub>2</sub> = H;
2. MeOSalen, R<sub>1</sub> = OCH<sub>3</sub>, R<sub>2</sub> = H;
3. *t*-Bu-Salen, R<sub>1</sub> = R<sub>2</sub> = *t*-Bu

**Alexander V. Shtemenko, Oleg V. Kozhura, Alexander A. Pasenko, Konstantin V. Domasevitch**

*Polyhedron* 22 (2003) 1547

New octachlorodirhenate(III) salts: solid state manifestation for a certain conformational flexibility of the [Re<sub>2</sub>Cl<sub>8</sub>]<sup>2-</sup> ion

Octachlorodirhenate(III) ion [Re<sub>2</sub>Cl<sub>8</sub>]<sup>2-</sup>, which is usually fully eclipsed owing to a maximization of δ–δ overlap, in fact can adopt forced conformation with appreciable rotational distortion and effectively satisfy demands of a hydrogen bonding motif in the crystal.

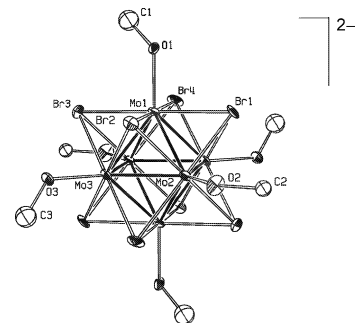


**Nevenka Brničević, Ivan Bašić, Besnik Hoxha, Pavica Planinić, Robert E. McCarley**

*Polyhedron* 22 (2003) 1553

Molybdenum and tungsten methoxo clusters with differently bonded methoxo groups. Crystal structure of [Na(CH<sub>3</sub>OH)<sub>5</sub>]<sub>2</sub>[Mo<sub>6</sub>(μ<sub>3</sub>-Br)<sub>8</sub>(OCH<sub>3</sub>)<sub>6</sub>]

The hexanuclear halide clusters of molybdenum and tungsten [M<sub>6</sub>(μ<sub>3</sub>-X)<sub>8</sub>]<sup>4+</sup> react with 2 and 4 sodium methoxide equivalents giving polymeric species with two intermolecular μ-methoxo groups and species with two μ-methoxo and two terminally bonded methoxo groups, respectively. With 6 sodium methoxide equivalents only monomeric compounds with [Mo<sub>6</sub>(μ<sub>3</sub>-X)<sub>8</sub>(OCH<sub>3</sub>)<sub>6</sub>]<sup>2-</sup> anions are formed. The crystal structure has been solved for the molybdenum bromo derivative.



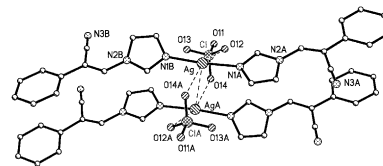


**Malachy McCann, Barry Coyle,  
John Briody, Francis Bass, Neil O’Gorman,  
Michael Devereux, Kevin Kavanagh,  
Vickie McKee**

*Polyhedron* 22 (2003) 1595

Synthesis and antimicrobial activity of (Z)-3-(1*H*-imidazol-1-yl)-2-phenylpropenenitrile and its metal complexes: X-ray crystal structures of the Zn(II) and Ag(I) complexes

(Z)-3-(1*H*-imidazol-1-yl)-2-phenylpropenenitrile (imppn) reacts with  $\text{Cu}(\text{ClO}_4)_2 \cdot 6\text{H}_2\text{O}$ ,  $\text{Zn}(\text{CH}_3\text{CO}_2)_2 \cdot 2\text{H}_2\text{O}$  and  $\text{AgClO}_4$  producing  $[\text{Cu}(\text{imppn})_4](\text{ClO}_4)_2 \cdot \text{H}_2\text{O}$  (1),  $[\text{Zn}(\text{imppn})_2(\text{CH}_3\text{CO}_2)_2] \cdot 2\text{H}_2\text{O}$  (2) and  $[\text{Ag}_2(\text{imppn})_4(\text{ClO}_4)_2]$  (3). Complexes 2 and 3 were characterised by X-ray crystallography, and all complexes were screened for their ability to inhibit the growth of *Candida albicans*.

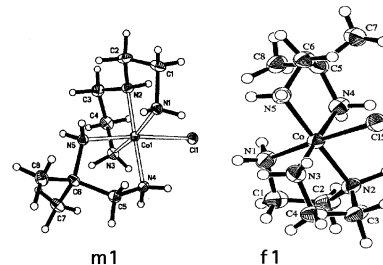


**Tao Zhu, Zhu Qian-Jiang, Xie Sai-Feng,  
W. Gregory Jackson, Zhou Zhong-Yuan,  
Zhou Xiang-Ge**

*Polyhedron* 22 (2003) 1603

The chemistry of  $[\text{Co}(\text{triamine})(\text{diamine})\text{Cl}]^{2+}$  complexes: the single crystal X-ray structures of five  $[\text{Co}(\text{dien})(\text{ibn})\text{Cl}]\text{ZnCl}_4$  isomers

The X-ray structures for five of the seven  $[\text{Co}(\text{dien})(\text{ibn})\text{Cl}]\text{ZnCl}_4 \cdot n\text{H}_2\text{O}$  isomers are reported—*anti-cis*(NH\*) (m1, right), *syn-cis*(NH\*) (m2), *anti-trans*(NH\*) (m3), *cis*(Cl)—*cis*(N\*) (f1, right) and *trans*(Cl)—*cis*(N\*) (f2). Three independent X-ray structures were determined for salts of the m1, f1 (two) and m3 isomers, in excellent agreement. The results confirm the solution structures determined by 2D NMR techniques.

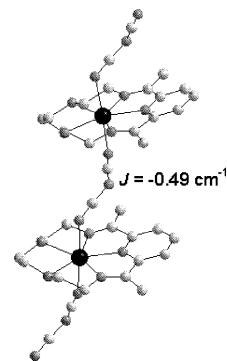


**Carmen Paraschiv, Jean-Pascal Sutter,  
Marc Schmidtman, Achim Müller,  
Marius Andruh**

*Polyhedron* 22 (2003) 1611

$[\text{Mn}(\text{MAC})\{\mu_{1,5}\text{-N}(\text{CN})_2\}](\text{PF}_6)$ : a new one-dimensional coordination polymer with  $\mu_{1,5}$ -dicyanamido bridges (MAC = pentaaza macrocyclic ligand)—synthesis, crystal structure and magnetic properties

By reacting  $[\text{Mn}(\text{MAC})(\text{H}_2\text{O})_2]\text{Cl}_2$  with sodium dicyanamide, a new 1D coordination polymer has been obtained. The cryomagnetic investigation reveals a weak antiferromagnetic interaction between the 1,5-dicyanamido bridged manganese(II) ions.

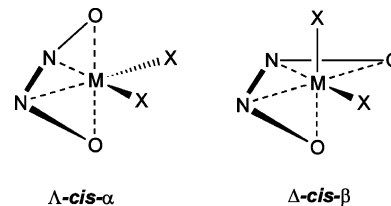


**Christopher J. Sanders,  
Paul N. O’Shaughnessy, Peter Scott**

*Polyhedron* 22 (2003) 1617

Non-planar manganese Schiff-base complexes; synthesis and molecular structures

Mn(II) and Mn(III) complexes of three biaryl-bridged salicylaldimine  $\text{N}_2\text{O}_2$  proligands have trigonal bipyramidal, and octahedral *cis*- $\alpha$  and *cis*- $\beta$  structures. While the biaryl unit in these and similar compounds is able to predetermine the chirality-at-metal very efficiently, it is apparent that conversions between diastereomeric forms, albeit with the same helicity, may occur in response to the nature of the co-ligands.

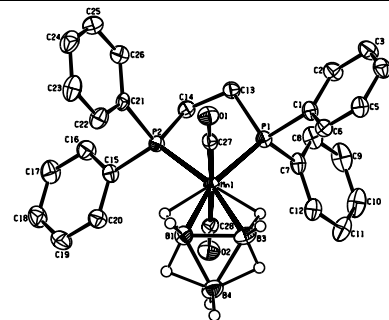


Michael A. Beckett, David S. Brassington,  
Simon J. Coles, Thomas Gelbrich,  
Michael B. Hursthouse

*Polyhedron* 22 (2003) 1627

Synthesis and characterisation of a series of Group 7 metal 2,2,2,2-dicarbonylbis(triorganophosphine)-*arachno*-2-metallatetraboranes,  $[M(CO)_2L_2(B_3H_8)]$  ( $M = Re, Mn$ ); crystal and molecular structures of  $[Re(CO)_2(dppf)(B_3H_8)]$  and  $[Mn(CO)_2(dppe)(B_3H_8)]$

A series of Group 7 metal *arachno*-2-metallatetraboranes,  $[M(CO)_2L_2(B_3H_8)]$  ( $M = Re, Mn$   $L =$  organophosphine) were synthesised from reactions of  $[NBu_4][B_3H_8]$  with *fac, cis*- $[MBr(CO)_3L_2]$  under photolytic conditions. Single-crystal X-ray diffraction studies of  $[Re(CO)_2(dppf)(B_3H_8)]$  and  $[Mn(CO)_2(dppe)(B_3H_8)]$  are reported.



The publisher encourages the submission of articles in electronic form thus saving time and avoiding rekeying errors. For detailed instructions on the preparation of manuscripts and of electronic artwork, consult the Author Gateway from Elsevier Science at <http://authors.elsevier.com>



Full text of this journal is available, on-line from **ScienceDirect**. Visit [www.sciencedirect.com](http://www.sciencedirect.com) for more information.

**CONTENTS**  
**Direct**

This journal is part of **ContentsDirect**, the *free* alerting service which sends tables of contents by e-mail for Elsevier Science books and journals. You can register for **ContentsDirect** online at: [www.elsevier.com/locate/contentsdirect](http://www.elsevier.com/locate/contentsdirect)



<http://chemweb.com/gateways/elsevier.html>