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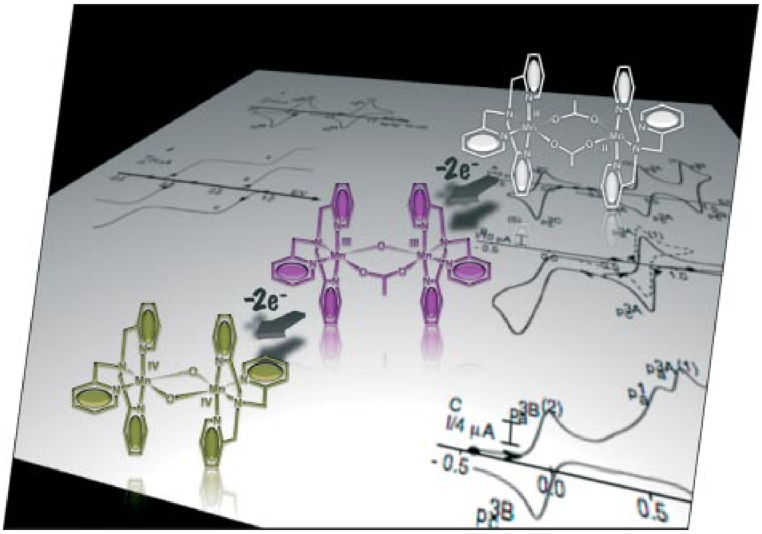
The EUChemSoc Societies have taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry.* Three further EUChemSoc Societies (Austria, Czech Republic and Sweden) are Associates of the two journals.

COVER PICTURE

The cover picture shows the electro-induced core interconversions in three dinuclear manganese tris(2-methylpyridyl)amine (tpa) complexes. The mono-(μ-oxo) mono-(μ-acetato) $[Mn_2^{III,III}(O)(O_2CCH_3)(tpa)_2]^{3+}$ and the bis-(μ-oxo) $[Mn_2^{IV,IV}(O)_2(tpa)_2]^{4+}$ complexes are selectively and quasi-quantitatively generated by sequential exhaustive electrochemical two-electron oxidations of the bis-(μ-acetato) $[Mn_2^{II,II}(O_2CCH_3)_2(tpa)_2]^{2+}$ complex. At each step one acetato bridge is substituted by an oxo bridge coming from the deprotonation of one residual water molecule in the solvent. The background picture shows some cyclic voltammograms recorded during this study. Details are discussed in the article by M.-N. Collomb et al. on p. 3179 ff. We thank Dr. Damien Jouvenot for the design of the cover picture.



CONTENTS

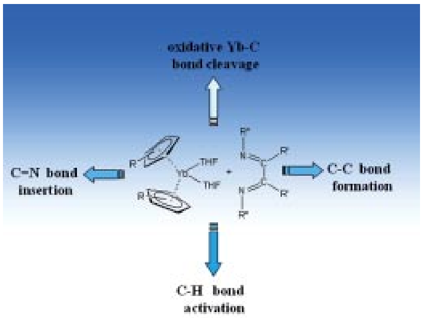
MICROREVIEW

Steric Manipulation

A. A. Trifonov* **3151–3167**

Reactions of Ytterbocenes with Diimines: Steric Manipulation of Reductive Reactivity

Keywords: Lanthanides / Diimines / Reductive reactivity / N,N ligands / Redox tautomerism



Reactions of ytterbocenes with diimines are found to be strongly influenced by the steric crowding in the coordination sphere of the metal atom and the coordination capacities of π-aromatic ligands. The reactions may occur with oxidation of the ytterbium atom as well as with retention of its oxidation state. C–C bond formation, C–H bond activation, C=N bond insertion, and oxidative Yb–C bond cleavage processes are documented.

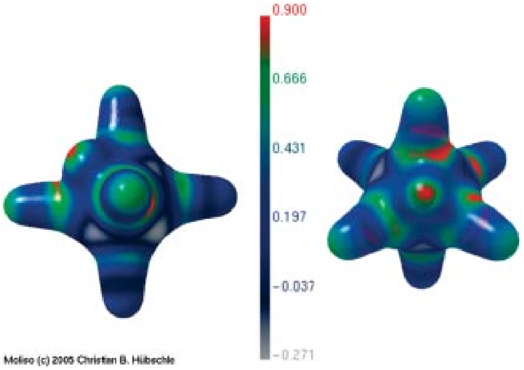
SHORT COMMUNICATIONS

Charge Density Determination

D. Förster, S. Scheins, P. Luger, D. Lentz,* W. Preetz **3169–3172**

Electron Density and Bonding in Borates: An Experimental Study of Tetrabutylammonium Heptahydridohexaborate, $[(C_4H_9)_4N][B_6H_7]$

Keywords: Charge density / Borates / Topological analysis



Moliso (c) 2005 Christian B. Hübschle

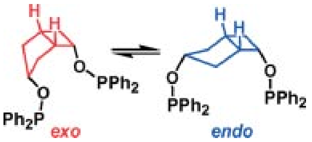
The charge density of $[B_6H_7]^-$ has been determined from high-resolution X-ray diffraction data. The electrostatic potential provides information about its reactivity.

Flexible Coordination Modes

I. J. S. Fairlamb,* S. Tommasi, B. E. Moulton, W. Zheng, Z. Lin, A. C. Whitwood **3173–3178**

Conformational Flexibility in a Carbobicyclic Diphosphinite Ligand

Keywords: Ligands / Bite angle / Trans-spanning / Palladium / Binuclear complexes

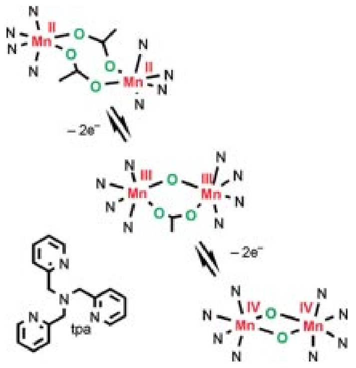


The conformational flexibility of FLEXIphosO is demonstrated experimentally for the first time. Variable bite angles can be accessed using carbobicyclic backbone structures for bidentate ligands.

FULL PAPERS

Dinuclear Manganese Complexes

The electro-induced interconversion of the bis(μ-acetato) dinuclear manganese(II,II) complex $[Mn_2(O_2CCH_3)_2(tpa)_2]^{2+}$ into the corresponding mono-(μ-oxo) mono-(μ-acetato) $Mn_2^{III,III}$ and bis(μ-oxo) $Mn_2^{IV,IV}$ complexes has been investigated in CH_3CN. The isolation and characterization of the $Mn_2^{III,III}$ complex is also reported.

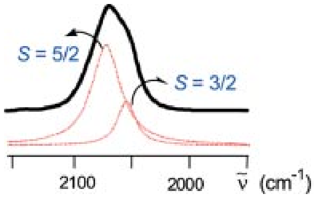


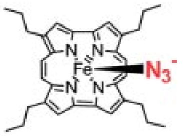
M.-N. Collomb,* C. Mantel, S. Romain, C. Duboc, J.-C. Leprêtre, J. Pécaut, A. Deronzier **3179–3187**

Redox-Induced μ-Acetato and μ-Oxo Core Interconversions in Dinuclear Manganese Tris(2-methylpyridyl)amine (tpa) Complexes: Isolation and Characterization of $[Mn_2^{III}(\mu\text{-}O)(\mu\text{-}O_2CCH_3)(tpa)_2]^{3+}$

Keywords: Manganese / Electrochemistry / N ligands / Bridging ligands

Iron(III) Spin Crossover





Magnetic characterization of the azide complex of iron(III) porphycene indicates that this complex is in mixed S = 5/2, 3/2 states. The IR stretching band of the coordinating azide was found to split into the 2049- and 2066-cm^{-1} bands, demonstrating that the two spin isomers are not quantum-mechanically admixed but in thermal equilibrium. The minimum lifetime of the spin isomers was estimated to be 0.3 ps.

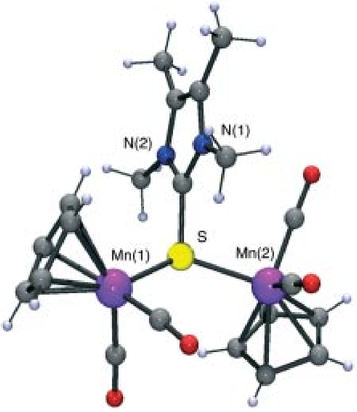
S. Neya,* A. Takahashi, H. Ode, T. Hoshino, M. Hata, A. Ikezaki, Y. Ohgo, M. Takahashi, H. Hiramatsu, T. Kitagawa, Y. Furutani, H. Kandori, N. Funasaki, M. Nakamura **3188–3194**

Magnetic and Infrared Properties of the Azide Complex of (2,7,12,17-Tetrapropylporphycenato)iron(III): A Novel Admixing Mechanism of the S = 5/2 and S = 3/2 States

Keywords: Macrocyclic ligands / Iron / Electronic structure / Spin crossover / Azides / IR spectroscopy

Bridging Thione Ligands

Photolysis of $[CpMn(CO)_3]$ in the presence of 1,3,4,5-tetramethylimidazoline-2-thione produced a bridging thione complex, $[\{CpMn(CO)_2\}_2(\mu\text{-}SC_3N_2Me_4)]$, which has an unprecedented geometry featuring a pyramidal sulfur atom and long Mn···Mn distance. Photoreaction of $[M(CO)_6]$ with the thione yielded mononuclear complexes $[M(CO)_5(SC_3N_2Me_4)]$ (M = Mo, W).



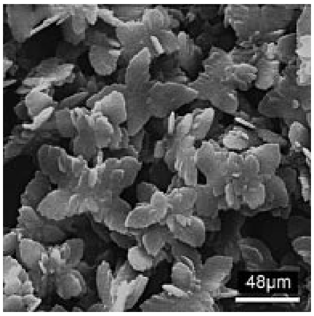
K. Saito, Y. Kawano,* M. Shimoi* **3195–3200**

Syntheses and Structures of Molybdenum, Tungsten, and Manganese Complexes of a Cyclic Thiourea, $[M(CO)_5(SC_3N_2Me_4)]$ (M = Mo, W) and $[\{CpMn(CO)_2\}_2(\mu\text{-}SC_3N_2Me_4)]$

Keywords: Imidazolinethiones / Manganese / Molybdenum / Thioureas / Tungsten

Biomineralization

The formation of flower-like crystals of calcium oxalate monohydrate is induced by *E. coli* and its secretions. The true role of *E. coli* in the formation of urinary stones is explored in a new line of research.



L. Chen, Y. H. Shen,* R. Jia, A. J. Xie,* B. Huang, X. B. Cheng, Q. F. Zhang, R. Y. Guo **3201–3207**

The Role of *Escherichia coliform* in the Biomineralization of Calcium Oxalate Crystals

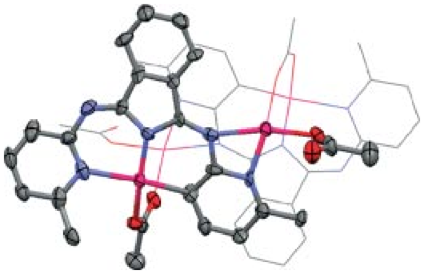
Keywords: Urolithiasis / *Escherichia coliform* / Calcium oxalate / Nucleation and growth / Biomineralization

Cyclopalladation

**M. Bröring,* C. Kleeberg,
E. Cónsul Tejero 3208–3216**

Syntheses, Structures and Coordination Modes of Acetatopalladium(II) Complexes with 1,3-Bis(2-arylimino)isoindoline Ligands of Different Steric Influence

Keywords: Cyclometalation / Isoindoline ligands / Polynuclear complexes / Palladium / Coordination modes



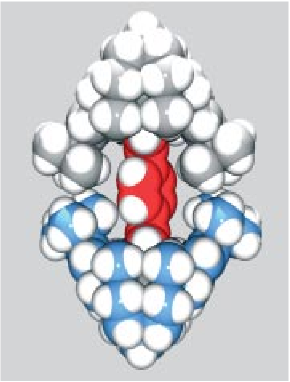
A comparative study on palladium complexes of bai ligands with different steric hindrance revealed that different coordination modes (*NNN* vs. *CNN* coordination) are possible in the system. The outcome of the metallation reaction was found to depend on a number of factors like solubility of the products, stoichiometry of metal precursor and charge compensation.

Ligand Encapsulation

**V. Lozan, P. Y. Solntsev,
G. Leibeling, K. V. Domasevitch,*
B. Kersting* 3217–3226**

Tetranuclear Nickel Complexes Composed of Pairs of Dinuclear LNi_2 Fragments Linked by 4,4′-Bipyrazolyl, 1,4-Bis(4′-pyrazolyl)benzene, and 4,4′-Bipyridazine: Synthesis, Structures, and Magnetic Properties

Keywords: Macrocyclic ligands / Bipyrazolate ligands / Nickel / Polynuclear complexes / Magnetic properties



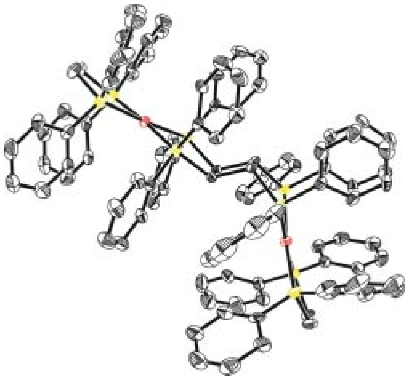
The ability of 4,4′-bipyrazolate type ligands to link dinuclear LNi_2 units has been examined. The formation of the Ni_4 complexes depends critically on the steric bulkiness of the supporting ligand L and the length of the organic spacer between the connecting heterocycles. The ability of the bipyrazolate moiety to transmit magnetic exchange interactions has also been examined.

Quadrant Effects

**C. Bachmann, R. Gutmann, G. Czermak,
A. Dumfort, S. Eller, M. Fessler,
H. Kopacka, K.-H. Ongania,
P. Brüggeller* 3227–3239**

The Influence of Steric Pressure on the Structure of Homodimetallic Rhodium(I) and Iridium(I) Complexes Containing a Bis(bidentate) Phosphane Ligand

Keywords: X-ray diffraction / Chelates / Phosphane ligands / Iridium / Rhodium



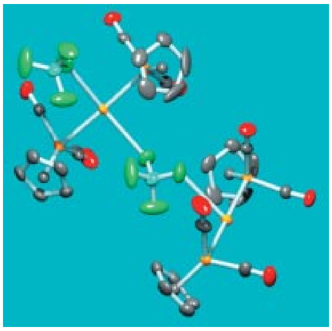
Fifteen novel homodimetallic Rh^I and Ir^I complexes containing *cis,trans,cis*-1,2,3,4-tetrakis(diphenylphosphanyl)cyclobutane ligands were prepared. The solid-state structures of seven of these new compounds were determined to study the influence of steric pressure. The onset of this steric pressure also changes the quadrant effect.

Metal–Metal Bonds

**I. Bytheway, C. S. Griffith,
G. A. Koutsantonis,* B. W. Skelton,
A. H. White 3240–3246**

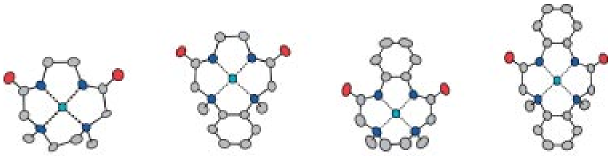
A Linear Ru-Tl-Ru Complex Obtained from Halide Abstraction: An Example of Metal-Dative Bonding

Keywords: Ruthenium / Thallium / AIM calculations / Metal–metal bond



Complexes containing ruthenium–thallium bonds are reported. One containing a linear Ru–Tl–Ru vector was prepared by halide abstraction from a ruthenium chloride complex using $TlBF_4$. The bonding in this monocation was rationalised using AIM theroretical calculations which inferred $Ru^0–Tl^I–Ru^0$ as the best description.

Ni^{II}/Ni^{III} Chemistry



This work shows the design and synthesis of four novel macrocyclic ligands and their square-planar Ni^{II} complexes **1**–**4**. The attainable redox potential for Ni^{II} complexes (>0.6 V vs. SCE) allowed us to oxidize them electrochemically or chemically to generate an unstable "green species" that show distinct features in the absorption spectrum and exhibit anisotropic EPR spectrum. These findings strongly point out that the unstable green species is a Ni^{III} species.

S. K. Sharma, S. Upreti,
R. Gupta* **3247–3259**

Effect of Ligand Architecture on the Structure and Properties of Square-Planar Nickel(II) Complexes of Amide-Based Macrocycles

Keywords: Nickel complexes / Macrocyclic ligands / Electrochemistry

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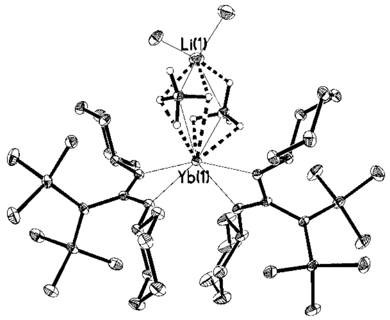
Polymerization Catalysts

New lanthanide borohydride complexes supported by bulky guanidinate ligands $[(Me_3Si)_2NC(N\text{-}Cy)_2]_2Ln(\mu\text{-}BH_4)_2Li(THF)_2$ (Ln = Nd, Sm, Yb) initiate the ring-opening polymerization of racemic lactide, providing atactic polymers with a good degree of control, i.e. controlled molecular weights and relatively narrow polydispersities ($1.09 < M_w/M_n < 1.77$).



G. G. Skvortsov, M. V. Yakovenko,
P. M. Castro, G. K. Fukin,
A. V. Cherkasov, J.-F. Carpentier,*
A. A. Trifonov* **3260–3267**

Lanthanide Borohydride Complexes of Bulky Guanidinate Ligands $[(Me_3Si)_2NC(N\text{-}Cy)_2]_2Ln(\mu\text{-}BH_4)_2Li(THF)_2$ (Ln = Nd, Sm, Yb): Synthesis, Structure and Catalytic Activity in Lactide Polymerization

Keywords: Lanthanides / Borohydrides / Guanidinates / N ligands / Lactides / Polymerization

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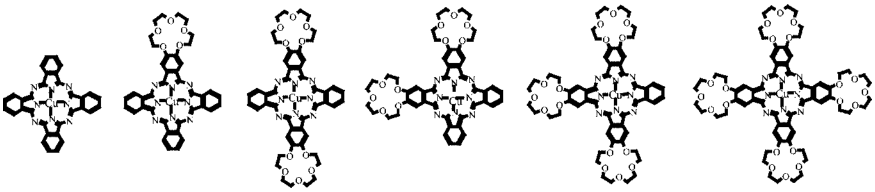
Unsymmetrical (Phthalocyaninato)Cu^{II}



A series of unsymmetrical (phthalocyaninato)copper(II) complexes containing different numbers of 15-crown-5 groups at the peripheral positions have been prepared. The effects of the substituent number and molecular symmetry on the spectra and supramolecular structure formation in solution have been systematically investigated.

N. Sheng, Y. Zhang, H. Xu, M. Bao,
X. Sun,* J. Jiang* **3268–3275**

(Phthalocyaninato)copper(II) Complexes Fused with Different Numbers of 15-Crown-5 Moieties – Synthesis, Spectroscopy, Supramolecular Structures, and the Effects of Substituent Number and Molecular Symmetry

Keywords: Phthalocyanines / Crown ether / Supramolecular chemistry / Molecular symmetry

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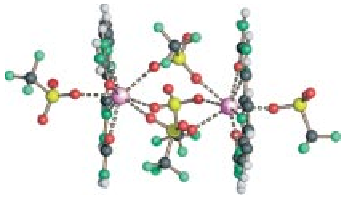
Lanthanide Complexes

Pentadentate hydrazone-type ligands based on semicarbazone or SAMP are prepared and used for the coordination of lanthanide(III) salts. A series of achiral as well as chiral coordination compounds is thus obtained and characterized.



M. Albrecht,* S. Mirtschin, O. Osetska,
S. Dehn, D. Enders, R. Fröhlich, T. Pape,
E. F. Hahn **3276–3287**

Pentadentate Ligands for the 1:1 Coordination of Lanthanide(III) Salts

Keywords: Hydrazone / Lanthanides / Coordination compounds / Chelating ligands / Helical compounds