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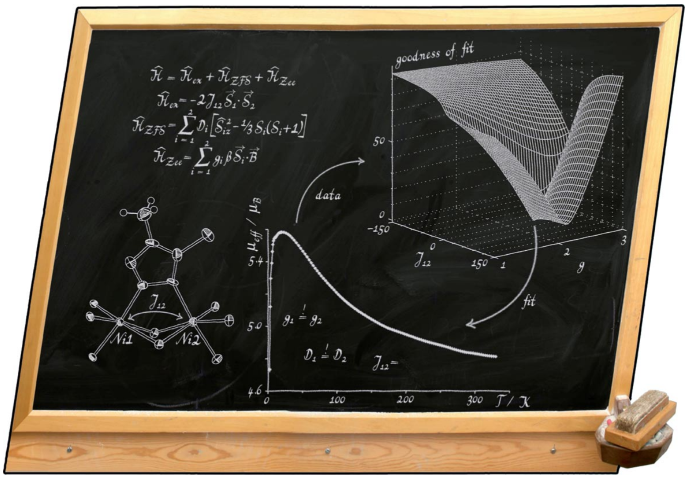
COVER PICTURE

The cover picture shows a schematic representation of the procedure used for the determination of the magnetic properties of the macrocyclic dinickel complex $[Ni_2L(\mu\text{-}SCN_4Me)]BPh_4\cdot 2MeCN$. On the left, the complex is depicted in the form of its two nickel atoms, their first coordination sphere and the 1-methyltetrazole-5-thiolate coligand as obtained from the crystal structure determination. The found N(3),N(4)-bridging coordination mode is hitherto unknown for 1-R-tetrazole-5-thiolates. In addition, theoretical calculations were carried out in order to study the coordination features of the complex. Details are discussed in the article by S. V. Voitekhovich, B. Kersting et al. on p. 5387 ff. The authors gratefully acknowledge the DAAD (Leonard-Euler program) and the Erasmus Mundus program “Advanced Spectroscopy in Chemistry”. Supported by the Deutsche Forschungsgemeinschaft within the Graduate School BuildMoNa.



CONTENTS

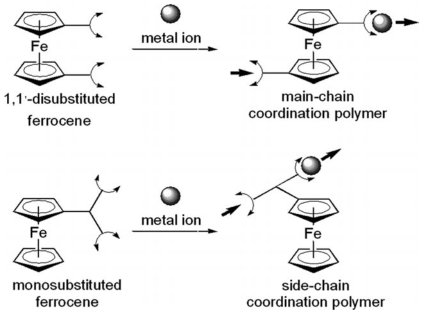
MICROREVIEW

Ferrocene in Coordination Polymers

R. Horikoshi, T. Mochida* 5355–5371

Ferrocene-Containing Coordination Polymers: Ligand Design and Assembled Structures

Keywords: Iron / Metallocenes / Metallacycles / Crystal engineering / Selfassembly



This microreview covers the design and assembled structures of ferrocene-containing coordination polymers with basic bidentate ligands. The structural diversity of the coordination polymers is attributed to the conformational flexibility as well as the flexible design of the ferrocene-containing ligands, which also causes the variation in their properties.

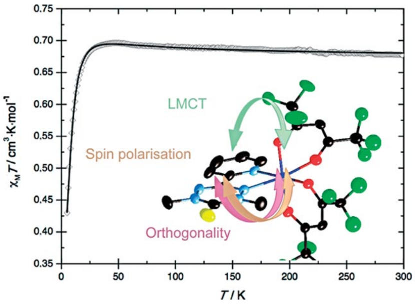
SHORT COMMUNICATIONS

Metal-Radical Exchange Interaction

O. Oms, J.-B. Rota, L. Norel,
C. J. Calzado, H. Rousselière, C. Train,*
V. Robert* 5373–5378

Beyond Kahn's Model: Substituent and Heteroatom Influence on Exchange Interaction in a Metal-Verdazyl Complex

Keywords: Exchange interactions / Radicals / Ab initio calculations / Copper



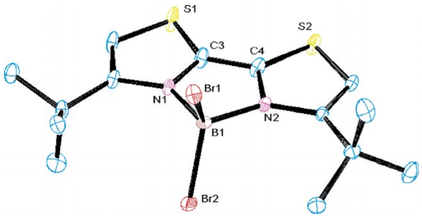
The first thiooxoverdazyl metal complex appears as a case study of the metal-radical exchange interaction: wavefunction calculations reveal that the observed ferromagnetic interaction is controlled by the radical substituent rather than by its heteroatom as anticipated by Kahn's model.

Boron Bithiazole Complexes

M. Findlater,* N. S. Swisher,
P. S. White 5379–5382

Synthesis and Structure of Boron–Bithiazole Complexes

Keywords: Boron / Boronium cations / Bithiazole ligands



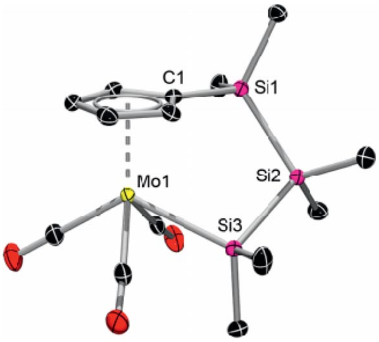
Two boronium cations, supported by the bithiazole ligand framework, were synthesized and characterized using spectroscopic techniques. The X-ray single-crystal diffraction study reveals the first structurally characterized *p*-block bithiazole complex.

ansa Complexes

H. Braunschweig,* R. Dörfler,
K. Hammond, J. Mies,
K. Radacki 5383–5385

Synthesis and Structure of Trisilane-1,3-diyl *ansa* Half-Sandwich Complexes of Group 6 Metals

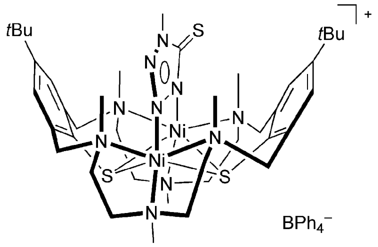
Keywords: Molybdenum / Tungsten / *ansa* half-sandwich complexes / Silicon



The synthesis and characterization of new silicon-bridged *ansa* half-sandwich complexes of molybdenum and tungsten are described. Furthermore, the synthesis of two new dinuclear half-sandwich complexes is presented.

Dinuclear Metal Complexes

A novel N(3),N(4)-bridging coordination mode of 1-R-tetrazole-5-thiolates has been observed in the dinickel complex $[Ni_2L(\mu\text{-}SCN_4Me)]BPh_4$, where L represents a macrocyclic bis(triamine−thiophenolate) ligand.



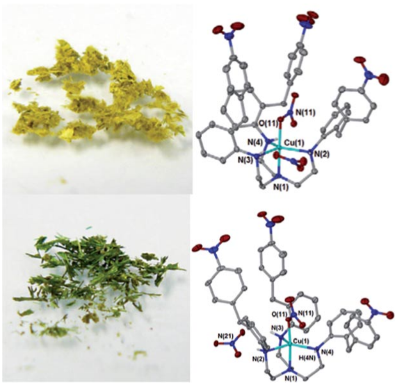
S. V. Voitekhovich,* R. Syre, J. Lach,
V. E. Matulis, P. N. Gaponik,
O. A. Ivashkevich,
B. Kersting* .... 5387−5393

A Novel N(3),N(4)-Bridging Coordination Mode of 1-R-Tetrazole-5-thiolates − Synthesis, X-ray Diffraction, Magnetic Properties and Quantum-Chemical Study of a Macrocyclic Dinickel Complex Coligated by 1-Methyltetrazole-5-thiolate

Keywords: Tetrazoles / Nickel / Macrocyclic ligands / N,S ligands / Computational chemistry

Distortional Isomerism

Two distortional isomers have been isolated from the reaction of $Cu(NO_3)_2{\cdot}3H_2O$ with a triaryl derivative of the tripodal tris(aminoethyl)amine, whose distinctively different colours, green-yellow and dark green, most likely arise from a major difference in one of the Cu−N equatorial bond lengths.

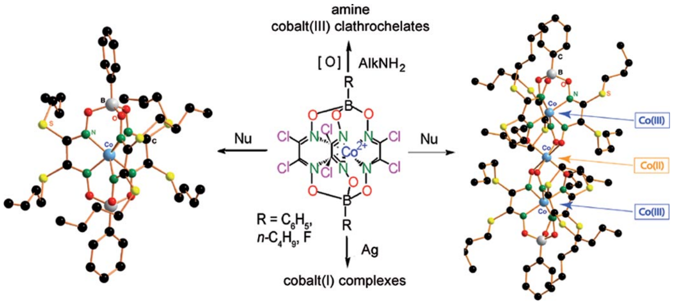


A. Almesåker, P. Gamez, J. L. Scott,
S. J. Teat, J. Reedijk,*
L. Spiccia* .... 5394−5400

Distortional Isomerism in Copper(II) Nitrato Complexes of *N*,*N*′,*N*′′-Tris{[(*para*-nitrobenzyl)phenyl]aminoethyl}amine

Keywords: Copper / Tripodal ligands / Coordination modes / Hydrogen bonds / Distortional isomerism

Cage Compounds



Hexachlorine-containing cobalt(II) clathrochelates were prepared by means of template condensation on a Co^{2+} matrix. Their nucleophilic substitution with thiolate anions and aliphatic amines gave cobalt(II,III) sulfide and amine mono- and bis-clathrochelates, whereas reduction led to the cobalt(I) complexes. Cobalt(II) clathrochelates undergo $1/2 \leftrightarrow 3/2$ spin transition and Jahn−Teller distortion.

Y. Z. Voloshin,* O. A. Varzatskii,
V. V. Novikov, N. G. Strizhakova,
I. I. Vorontsov, A. V. Vologzhanina,
K. A. Lyssenko, G. V. Romanenko,
M. V. Fedin, V. I. Ovcharenko,
Yu. N. Bubnov .... 5401−5415

Tris-Dioximate Cobalt(I,II,III) Clathrochelates: Stabilization of Different Oxidation and Spin States of an Encapsulated Metal Ion by Ribbed Functionalization

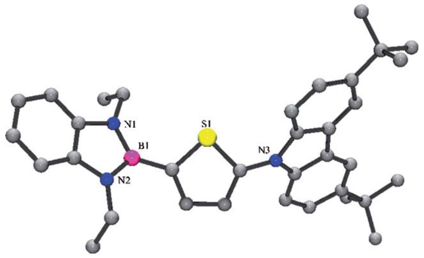
Keywords: Cobalt complexes / Clathrochelates / Cage compounds / Ligand reactivity / Jahn−Teller distortion

Borole Systems

L. Weber,* J. Halama, V. Werner,
K. Hanke, L. Böhling, A. Chrostowska,*
A. Dargelos, M. Maciejczyk,
A.-L. Raza, H.-G. Stammler,
B. Neumann 5416–5425

Synthetic, Structural, Photophysical and Computational Studies on π-Conjugated 1,3,2-Benzodiazaboroles with Carbazole Building Blocks

Keywords: Boron / Carbazoles / Density functional calculations / Photophysics



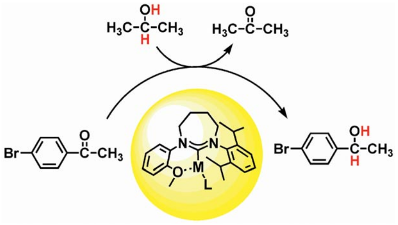
Molecules comprising benzodiazaborole and carbazole units either directly linked by a B–N bond or connected through a thiophene spacer were synthesized from 2-bromoboroles and the corresponding lithium amide or lithium thienyl. The structures and photophysical properties were studied experimentally as well as by DFT.

Functionalised N-Heterocyclic Carbenes

A. Binobaid, M. Iglesias, D. Beetstra,
A. Dervisi, I. Fallis,
K. J. Cavell* 5426–5431

Donor-Functionalised Expanded Ring N-Heterocyclic Carbenes: Highly Effective Ligands in Ir-Catalysed Transfer Hydrogenation

Keywords: N-Heterocyclic carbenes / Iridium / Rhodium / Hydrogenation / Transfer hydrogenation / Ketones



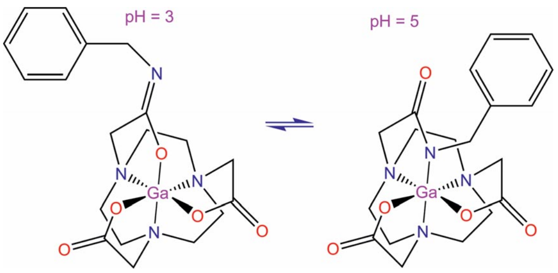
Performances of a number of Rh^I and Ir^I complexes of unsymmetrical *o*-methoxyphenyl donor-functionalised NHCs with differing carbene ring sizes were tested in catalytic transfer hydrogenation. Rh^I complexes displayed no activity. However, the corresponding Ir^I complexes were found to be extremely effective catalysts, exhibiting excellent turnover frequencies and catalyst stability.

Chelated Gallium Complexes

D. Shetty, S. Y. Choi, J. M. Jeong,*
L. Hoigebazar, Y.-S. Lee, D. S. Lee,
J.-K. Chung, M. C. Lee,
Y. K. Chung 5432–5438

Formation and Characterization of Gallium(III) Complexes with Monoamide Derivatives of 1,4,7-Triazacyclononane-1,4,7-triacetic Acid: A Study of the Dependency of Structure on Reaction pH

Keywords: Gallium / Chelates / X-ray diffraction / NMR spectroscopy / Amides



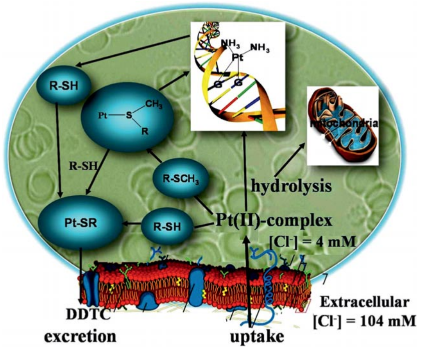
Amide derivatives of 1,4,7-triazacyclononane-1,4,7-triacetic acid (NOTA) can make stable chelates with Ga^{III}, the structure of which is dependent on the reaction pH. This novel method provides a tool for designing small bioactive molecules, as well as a means of conveniently binding NOTA derivatives to biomolecules without the need of an extra linker group.

Anti-Tumour Complexes

J. Bogojeski, Ž. D. Bugarčić,* R. Puchta,
R. van Eldik*........................... 5439–5445

Kinetic Studies on the Reactions of Different Bifunctional Platinum(II) Complexes with Selected Nucleophiles

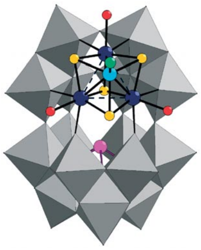
Keywords: Platinum / Kinetics / Reaction mechanisms / Ligand effects / Computational chemistry



Substitution reactions of the complexes *cis*-$[Pt(NH_3)_2Cl_2]$, $[Pt(SMC)Cl_2]^-$, $[Pt(en)Cl_2]$ and $[Pt(dach)Cl_2]$ (SMC = *S*-methyl-L-cysteine, en = ethylenediamine, dach = 1,2-diaminocyclohexane) with L-histidine, guanosine-5′-monophosphate and 1,2,4-triazole, were studied at pH = 7.2 and 310 K by using UV/Vis spectrophotometry. $[Pt(SMC)Cl_2]^-$ turns out to be the most labile complex of the series.

Chalcogenide Cluster–POM Hybrids

A new family of hybrid chalcogenide cluster-incorporated polyoxometalates (POMs) have been prepared in which the POM standard building block $\{W_3O_4\}^{10+}$ is replaced by the topologically similar chalcogenide cluster fragments $\{Mo_3S_4\}^{4+}$, $\{Mo_3S_2O_2\}^{4+}$, and $\{Mo_3CuS_4\}^{5+}$ with metal–metal bonds.

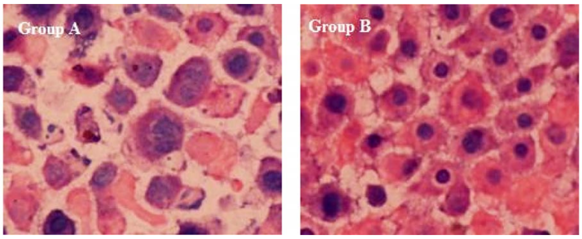


M. N. Sokolov,* E. V. Peresypkina, I. V. Kalinina, A. V. Virovets, V. S. Korenev, V. P. Fedin **5446–5454**

New Cluster–Polyoxometalate Hybrids Derived from the Incorporation of $\{Mo_3S_4\}$ and $\{Mo_3CuS_4\}$ Units into $\{EW_{15}\}$ Cores (E = As^{III}, Sb^{III}, Te^{IV})

Keywords: Molybdenum / Tungsten / Polyoxometalates / Cluster compounds / Crystal packing

Modified Magnetic Nanoparticles



HE staining results show that the peptide octreotide successfully conjugates to nanoparticles and is an efficient delivery vehicle to transport MNPs to the cytoplasm via endocytosis. This endocytosis occurs through special recognition by the somatostatin receptor.

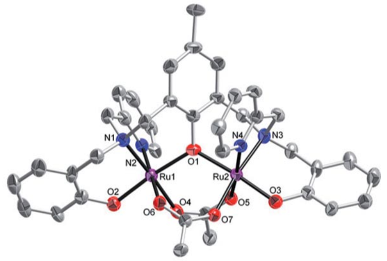
G.-C. Han, Y. Ouyang, X.-Y. Long, Y. Zhou, M. Li, Y.-N. Liu,* H.-B. Kraatz* **5455–5461**

(Carboxymethyl–Dextran)-Modified Magnetic Nanoparticles Conjugated to Octreotide for MRI Applications

Keywords: Bioconjugates / Octreotide / Endocytosis / Magnetic resonance imaging

Oxidation Catalysis

Three new oligonuclear complexes, $Ru_2(bbpmp)(\mu\text{-}OAc)_3$, $[Co_2(bbpmp)(\mu\text{-}OAc)(\mu\text{-}OMe)](PF_6)$ and $[Cu_4(Hbbpmp)_2(\mu\text{-}OAc)(H_2O)_2](OAc)(PF_6)_2$ {H_3bbpmp = 2,6-bis[(2-hydroxybenzyl)-(2-pyridylmethyl)aminomethyl]-4-methylphenol}, have been synthesized and characterized. They were found to catalyze allylic oxidation and oxidation of alcohols and di-*t*Bu-catechol.



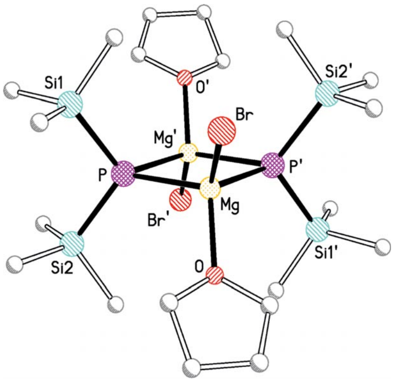
B.-L. Lee, M. D. Kärkäs, E. V. Johnston, A. K. Inge, L.-H. Tran, Y. Xu, Ö. Hansson, X. Zou, B. Åkermark* **5462–5470**

Synthesis and Characterization of Oligonuclear Ru, Co and Cu Oxidation Catalysts

Keywords: O-O activation / Homogeneous catalysis / N,O ligands / Oxidation

Phospha-Grignard Reagent

$\{Me_3Si\}_2PH$ reacts with MgMeBr to afford the magnesium phosphide $Mg(P\{SiMe_3\}_2)X(thf)$ (X = Br/Me). Reaction with Cp_2ZrCl_2 demonstrates that this is an effective phosphide transfer reagent. In contrast, reaction with Cp_2TiCl_2 gives reduced Ti^{III} species. A hexametallic example, $[Cp_2TiMg_2X_5(thf)_3]_2$ (X = Cl/Br), has been structurally determined, containing an "Mg_4X_{10}" core capped by "Cp_2Ti" units.



B. M. Day, M. P. Coles* **5471–5477**

Synthesis and Reactivity of the Phospha-Grignard Reagent $Mg(P\{SiMe_3\}_2)Br(thf)$

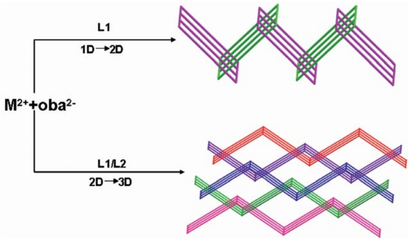
Keywords: Phospha-Grignard reagents / Magnesium / Phosphides / Metallocenes / Reduction

CONTENTS

Polycatenation Networks

💻 Three New Polycatenation Networks Based on 4,4′-Oxybis(benzoate) and Bis(imidazole) Ligands: Synthesis, Structure and Photoluminescence

Keywords: Metal-organic frameworks / Structure elucidation / Luminescence / Polycatenation



Three new polycatenation networks have been prepared. Interestingly, compound **1** represents a rare 1D→2D polycatenation formed by the catenation of 1D ladders and compounds **2** and **3** are uncommon 2D→3D frameworks formed by parallel polycatenation of 2D (4,4) sheets.

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* Author to whom correspondence should be addressed.

💻 Supporting information on the WWW (see article for access details).