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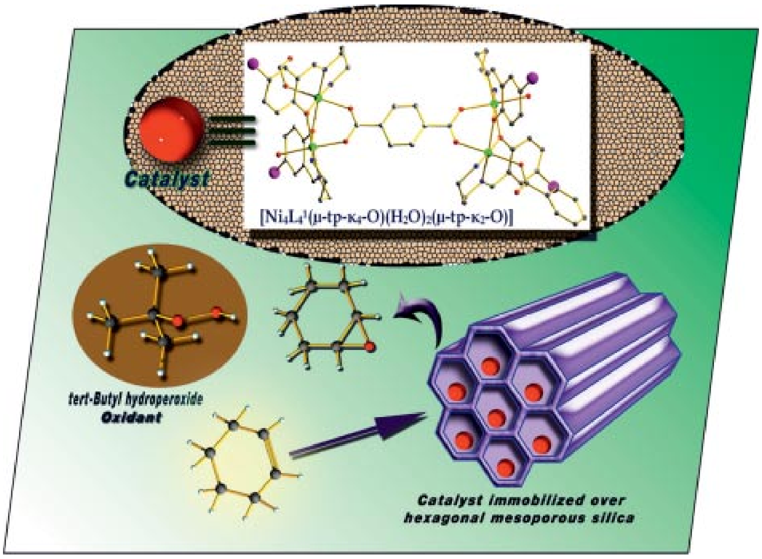
The EUChemSoc Societies have taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry.* Three further EUChemSoc Societies (Austria, Czech Republic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

COVER PICTURE

The cover picture shows how a novel tetranuclear Ni^{II} complex $[Ni_4L_4^1(\mu\text{-tp-}\kappa_4\text{-O})(H_2O)_2(\mu\text{-tp-}\kappa_2\text{-O})]\cdot 2C_2H_5OH\cdot CH_3OH\cdot 3H_2O$ [L^1 = *N*-(3-aminopropyl)-5-bromosalicylaldimine] acts as an active catalyst for the partial oxidation of cyclohexene into its epoxide product when it is immobilized over a network of hexagonal mesoporous silica. Herein the catalytic sites allow the formation of epoxide over their surfaces. *tert*-Butyl hydroperoxide acts as an oxidant for the partial oxidation process. A dinuclear unit is formed, in which the Ni^{II} is bridged by a phenolato group, and two such units are connected through a terephthalate moiety to form a tetranuclear nickel(II) complex. The tetranuclear units are connected to each other by another terephthalate moiety in its bis(monodentate) mode to form one-dimensional networks. Details are described in the article by P. Banerjee et al. on p. 5033 ff. The artwork was designed by Mr. Jishnunil Chakraborty and Mr. Gopal Das.



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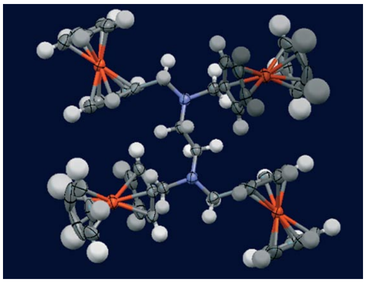
MICROREVIEW

Metallocene-Containing Dendrimers

A. E. Kaifer* **5015–5027**

Electron Transfer and Molecular Recognition in Metallocene-Containing Dendrimers

Keywords: Metallocenes / Dendrimers / Electrochemistry / Molecular recognition / Supramolecular chemistry



Dendrimers containing multiple metallocenes on their surface or a single metallocene in their core offer interesting properties in electron-transfer reactions and molecular recognition processes.

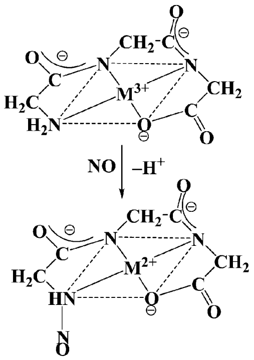
SHORT COMMUNICATION

Reductive Nitrosation

D. Shamir, I. Zilbermann,* E. Maimon,
G. Gellerman, H. Cohen,
D. Meyerstein* **5029–5031**

Reductive Nitrosation of Peptides Ligated to High-Valent Metal Cations

Keywords: Nitrosation / Peptides / NO / High-valent transition metals



Reductive *N*-nitrosations occur according to a radical mechanism.

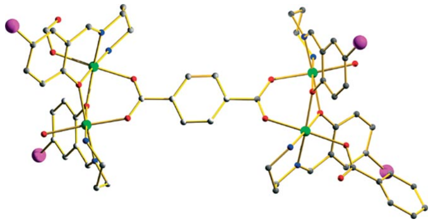
FULL PAPERS

Nickel Epoxidation Catalysts

J. Chakraborty, M. Nandi, H. Mayer-Figge,
W. S. Sheldrick, L. Sorace, A. Bhaumik,
P. Banerjee* **5033–5044**

Nickel Complexes with N_2O Donor Ligands: Syntheses, Structures, Catalysis and Magnetic Studies

Keywords: Nickel / N,O ligands / Epoxidation / Heterogeneous catalysis / Magnetic properties



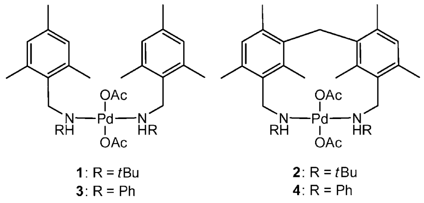
The terephthalato-bridged tetranuclear polymeric Ni^{II} complexes $[Ni_4L_4^1(\mu\text{-tp-}\kappa_4\text{-}O)(H_2O)_2(\mu\text{-tp-}\kappa_2\text{-}O)]\cdot 2C_2H_5OH\cdot CH_3OH\cdot 3H_2O$ (**1**) and $[Ni_4L_4^2(\mu\text{-tp-}\kappa_4\text{-}O)(H_2O)_2(\mu\text{-tp-}\kappa_2\text{-}O)]\cdot 3H_2O$ (**2**) are synthesized along with the dicyanoargentate-bridged polymeric complexes $[Ni^{II}(L^1)(H_2O)\{Ag(CN)_2\}]_\alpha$ (**3**) and $[Ni^{II}(L^3)(MeOH)\{Ag(CN)_2\}]_\alpha$ (**4**). All four complexes are effective catalysts for the epoxidation of alkenes. Variable-temperature magnetic susceptibility measurements of complex **1** show a medium-strength antiferromagnetic coupling between the Ni^{II} centers.

Square-Planar Palladium Complexes

L. Chahen, B. Therrien,
G. Süss-Fink* 5045−5051

Square-Planar Diacetatopalladium Complexes with *trans*-Configured Secondary Amine Ligands that Avoid Orthometalation: Ligand Synthesis, Coordination, Molecular Structure and Catalytic Potential for Suzuki Cross-Coupling Reactions

Keywords: Cross-coupling / Palladium / N ligands / Amines / Homogeneous catalysis



trans-Configured square-planar palladium complexes have been synthesized by treating palladium acetate with the amines or diamines. All complexes are found to catalyze Suzuki cross-coupling reactions of deactivated and even sterically hindered arene substrates.

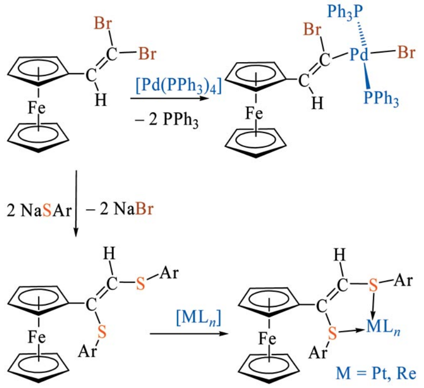
Heterodimetallic Ferrocene Complexes

S. Clément, L. Guyard, M. Knorr,*
F. Villafañe, C. Strohmann,
M. M. Kubicki .... 5052−5061

(2,2-Dibromovinyl)ferrocene as a Building Block for the Assembly of Heterodinuclear Complexes − Preparation of an σ-Alkenylpalladium Complex and Dimetallic Dithioether Complexes

Keywords: Oxidative addition / Thioether ligands / Platinum / Rhenium / Palladium / Electrochemistry

The oxidative addition of (2,2-dibromovinyl)ferrocene to $[Pd(PPh_3)_4]$ yields the σ-alkenyl complex *trans*-$[\{Pd(Br)(PPh_3)_2\}-C(Br)=C(H)-Fc]$. Nucleophilic attack of NaSR on $[Br_2C=C(H)-Fc]$ produces the π-conjugated dithioether compounds $[(RS)CH=C(SR)-Fc]$, which react with $[Re(thf)(CO)_3(\mu\text{-}Br)]_2$ or $[PtCl_2(PhCN)_2]$ to afford heterodinuclear dithioether complexes.

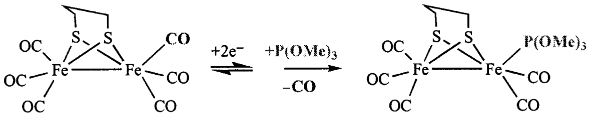


Iron-Only Hydrogenase Models

D. Morvan, J.-F. Capon,
F. Gloaguen,* P. Schollhammer,
J. Talarmin .... 5062−5068

Electrochemical Synthesis of Mono- and Disubstituted Diiron Dithiolate Complexes as Models for the Active Site of Iron-Only Hydrogenases

Keywords: Biomimetic catalysis / Iron-only hydrogenases / Diiron dithiolate / CO substitution / Electrochemistry / Proton reduction



$[Fe_2(S_2C_3H_6)(CO)_5\{P(OMe)_3\}]$ (**2**) and $[Fe_2(S_2C_3H_6)(CO)_4\{P(OMe)_3\}_2]$ (**3**) were prepared by the electrochemical reduction of $[Fe_2(S_2C_3H_6)(CO)_6]$ (**1**) in the presence of trimethyl phosphite. Electrochemical data indicate a CO-displacement reaction catalyzed by electron transfer. These compouds serves as models for the active site of iron-only hydrogenases.

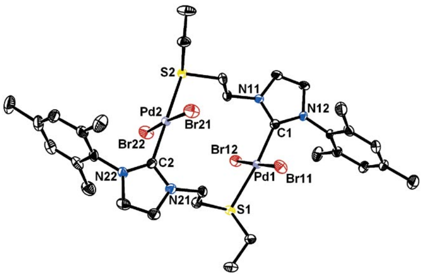
NHC Thioether Ligands

J. Wolf, A. Labande,* J.-C. Daran,
R. Poli .... 5069−5079

Nickel(II), Palladium(II) and Rhodium(I) Complexes of New NHC-Thioether Ligands: Efficient Ketone Hydrosilylation Catalysis by a Cationic Rh Complex

Keywords: N-Heterocyclic carbenes / S ligands / Nickel / Palladium / Rhodium

A series of new, bifunctional imidazolium−thioether ligands have been synthesised using a general method and used as N-heterocyclic carbene (NHC) precursors for complexation studies on various transition metals (Ni^{II}, Pd^{II} and Rh^{I}). Rh^{I} complexes showed a good activity for the hydrosilylation of ketones.



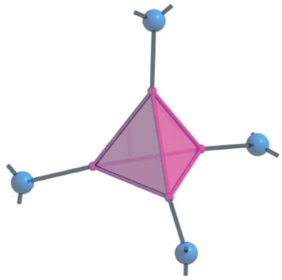
CONTENTS

Cluster Chemistry

A. Seifert, G. Linti* 5080–5086

Synthesis and Structure of Tetrameric Gallium(I) Amides

Keywords: Gallium / Amides / Cluster compounds / X-ray structures / Density functional calculations



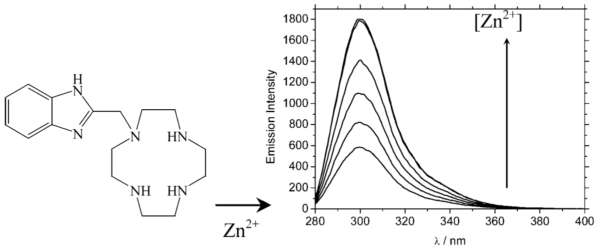
The gallium(I) amides $GaNR_2$ [NR_2 = tmp, $N(SiMe_3)$dipp] were prepared from "GaI". They form distorted tetrahedral tetramers in the solid state.

Fluorescent Probes

A. El Majzoub, C. Cadiou,
I. Déchamps-Olivier, F. Chuburu,*
M. Aplincourt 5087–5097

(Benzimidazolylmethyl)cyclen: A Potential Sensitive Fluorescent PET Chemosensor for Zinc

Keywords: Zinc / Macrocyclic ligands / X-ray diffraction / UV/Vis spectroscopy / Fluorescent probes / Fluorimetric titrations



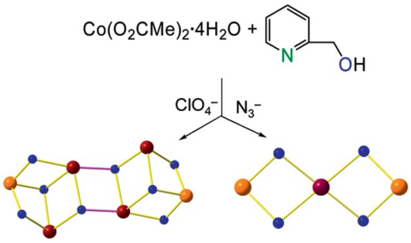
A new fluorescent probe for Zn^{2+}, namely (benzimidazolylmethyl)cyclen [LH], was designed and synthesised. On addition of successive amounts of Zn^{2+}, the fluorescence emission of LH increases linearly by a factor of 3.

Mixed-Valence $Co^{II/III}$ Complexes

T. C. Stamatatos, A. K. Boudalis,
K. V. Pringouri, C. P. Raptopoulou,
A. Terzis, J. Wolowska, E. J. L. McInnes,*
S. P. Perlepes* 5098–5104

Mixed-Valence Cobalt(II/III) Carboxylate Clusters: $Co^{II}_4Co^{III}_2$ and $Co^{II}Co^{III}_2$ Complexes from the Use of 2-(Hydroxymethyl)pyridine

Keywords: Mixed-valence cobalt complexes / [2-(Hydroxymethyl)pyridine]metal complexes / Linear trinuclear cobalt complexes / Hexanuclear cobalt clusters / Q-band electron paramagnetic resonance



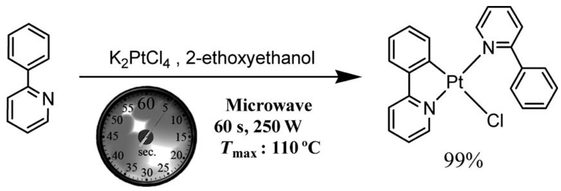
The shown reaction scheme gives a hexanuclear, mixed-valence cationic cluster containing the unprecedented $[Co^{II}_4Co^{III}_2(\mu_3\text{-}OR')_4(\mu\text{-}OR')_4]^{6+}$ core (the benzoate analogue has a similar structure) and a linear $Co^{III}Co^{II}Co^{III}$ neutral complex containing the $[Co^{II}Co^{III}_2(\mu\text{-}OR')_4]^{4+}$ core, depending on the inorganic anion present; the Co^{II} ions in the hexanuclear clusters are antiferromagnetically coupled.

Microwave-Assisted Cycloplatination

N. Godbert, T. Pugliese, I. Aiello,
A. Bellusci, A. Crispini,
M. Ghedini* 5105–5111

Efficient, Ultrafast, Microwave-Assisted Syntheses of Cycloplatinated Complexes

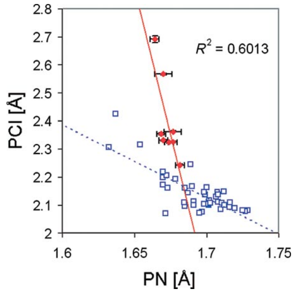
Keywords: Cycloplatination / Microwave synthesis / Platinum / Antitumor agents / X-ray diffraction



Mononuclear cycloplatinated chlorido complexes containing neutral ligands are synthesised by two different methods, namely conventional and microwave-assisted synthesis. All new complexes have been fully characterised and their crystal structures determined.

N-Heterocyclic Phosphanes

A series of N-heterocyclic chlorophosphanes and 1,3,2-diazaphospholenium salts with different substitution patterns is prepared and characterised by single-crystal X-ray diffraction studies. An analysis of trends in the structural parameters supports the view that the unusual P−Cl bond lengthening is attributable to n(N)/σ*(P-Cl) hyperconjugation.



S. Burck, D. Gudat,* K. Nättinen, M. Nieger, M. Niemeyer, D. Schmid .... **5112−5119**

2-Chloro-1,3,2-diazaphospholenes − A Crystal Structural Study

Keywords: Phosphanes / Halides / X-ray diffraction / Substituent effects / Structure correlation

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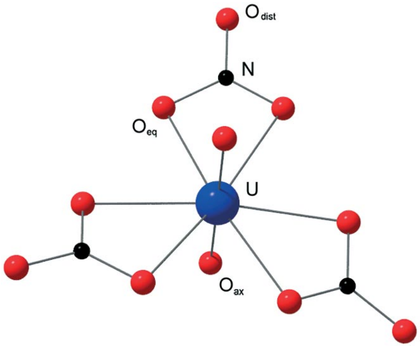
Speciation of Uranyl Nitrate

Complex formation between the uranyl ion and nitrate ions is investigated in acetonitrile and the ionic liquid [C_4mim][Tf_2N] at room temperature by optical absorption, magnetic circular dichroism and EXAFS spectroscopy. The sharp peaks in the absorption spectrum are characteristic of a $[UO_2(NO_3)_3]^-$ species with D_{3h} coordination symmetry. No evidence is found for the formation of uranyl nitrato complexes in aqueous solution.



K. Servaes, C. Hennig,* I. Billard, C. Gaillard, K. Binnemans, C. Görller-Walrand, R. Van Deun* .... **5120−5126**

Speciation of Uranyl Nitrato Complexes in Acetonitrile and in the Ionic Liquid 1-Butyl-3-methylimidazolium Bis(trifluoromethylsulfonyl)imide

Keywords: EXAFS spectroscopy / Ionic liquids / Uranium / UV/Vis spectroscopy / X-ray absorption spectroscopy

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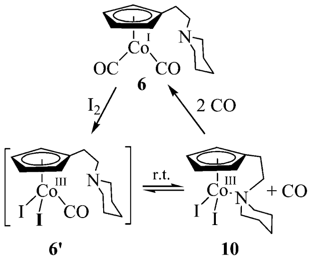
Cyclopentadienylcobalt Complexes

Chelation by the amino-functionalised side chain occurred when the Cp′-cobalt(I) dicarbonyl complexes were oxidised by iodine, resulting in the corresponding Cp′-cobalt(III) chelates via diiodocarbonyl intermediates. The stabilities of the intermediates were found to correlate with the I−Co−I angles and the repulsive force from the amino-functionalised groups in the chelates. Complex **6′** was reduced to **6** by the CO released upon chelation. Its PPh_3-substituted CH_2CH_2 solvate shows a strong N−H···I hydrogen bond.



L. Li, S. Han, Q. Li, Z. Chen, Z. Pang* .... **5127−5137**

Synthesis and Reactivity of Cobalt Complexes with Pendant Nitrogen Functional Groups

Keywords: Cyclopentadienylcobalt complexes / Carbonylcobalt complexes

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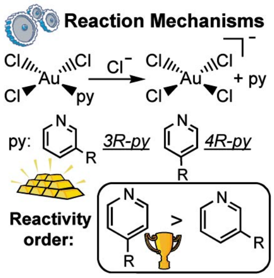
Inorganic Reaction Mechanisms

The process $AuCl_3(3R\text{-}py) + Cl^- \rightarrow AuCl_4^- + 3R\text{-}py$ (3R-py = *meta*-substituted pyridines) was studied in methanol at 25 °C and the data were compared with those found for *para*-substituted pyridines (4R-py). Until now the two groups of bases have been considered to behave in the same manner in their displacement reactions but, on the contrary, the reactivity of the two classes of N donors is slightly different and follows the order: 4R-py > 3R-py. This kinetic result is explained on the basis of an energetic difference between the frontier orbitals of the $AuCl_3(3R\text{-}py)$ and $AuCl_3(4R\text{-}py)$ derivatives.



B. Pitteri,* M. Bortoluzzi ..... **5138−5143**

Displacement of Neutral Nitrogen Donors by Chloride in $AuCl_3$(3R-py) (3R-py = *meta*-Substituted Pyridine): Comparison between *meta*- and *para*-Substituted Pyridines by Kinetics and DFT Calculations

Keywords: Gold / Kinetics / Nitrogen donors / Reaction Mechanism / DFT