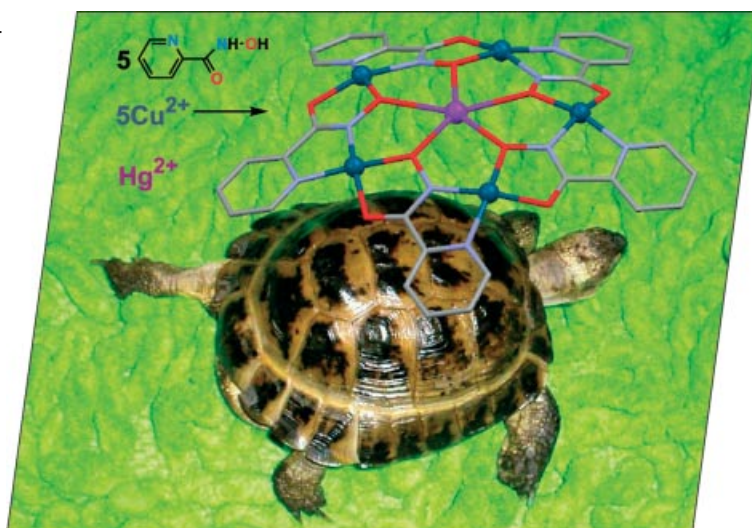




The EUChemSoc Societies have taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry*. Three further EUChemSoc Societies (Austria, Czech Republic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

COVER PICTURE

The cover picture shows the 5-metallacrown-5 complex, which is obtained by the self-assembly of five copper(II) ions, five 2-picolinedihydroximate ligands (picha) and the central mercury(II) ion. The (15-metallacrown-5)Hg^{II} and -Pb^{II} complexes have been obtained in the crystalline form as pyridine adducts [HgCu₅(picha)₅(py)₇](NO₃)₂ and [PbCu₅(picha)₅(py)₆](NO₃)₂ (axial pyridine molecules are not shown). Unlike the analogous lanthanide(III) derivatives, which are essentially flat, the presented 15-metallacrown-5 system is dome-shaped, although not as convex as the shell of the turtle Gubi (shown in the background). Gubi is the favorite pet of the daughter of one of the authors. Details are discussed in the article by J. Lisowski et al. on p. 3015 ff.



CONTENTS

MICROREVIEW

Coordination Rectangle, Prism, Tube

C.-L. Chen, J.-Y. Zhang,
C.-Y. Su* 2997–3010

Coordination Assemblies of Metallacyclic, Prismatic and Tubular Molecular Architectures Based on the Non-rigid Ligands

Keywords: Metallacycle / Coordination prism / Coordination tube / Non-rigid ligand / Molecular architecture



Recent progresses in self-assembly of coordination molecular architectures showing polygonal, prismatic and tubular structures on the basis of the semi-rigid or flexible ligands have been introduced. Four assembly routes depending on the symmetry interactions between specific ligands and metal

ions are outlined: a) molecular clips + metal ions of C_n symmetry; b) multipodal ligands + metal ions of C_2 symmetry; c) molecular clips + protected metal ions of restrained C_n symmetry and d) multicompartment self-assembly.

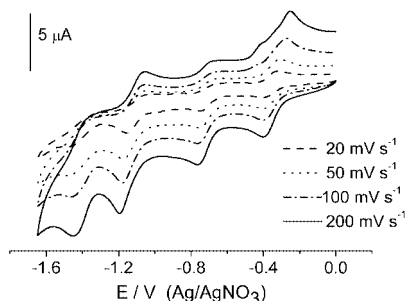
SHORT COMMUNICATION

Osmium-Rhodium Clusters

J. Po-Kwan Lau, Y.-J. Gu,
W.-T. Wong* 3011–3014

High-Yield Synthesis of a New Layered High-Nuclearity Carbonyl Osmium-Rhodium Cluster Complex – Synthesis, Structural Characterization, and Electrochemistry of $[\text{PPN}][\text{Os}_9\text{Rh}_3(\mu\text{-CO})_2(\text{CO})_{26}]$

Keywords: Osmium / Rhodium / High-nuclearity clusters / Electrochemistry



A direct and high-yield synthetic route for a novel dodecanuclear osmium-rhodium mixed-metal cluster is presented. The redox properties of the cluster were examined, and it was found that the anion behaves as an “electron reservoir”.

FULL PAPERS

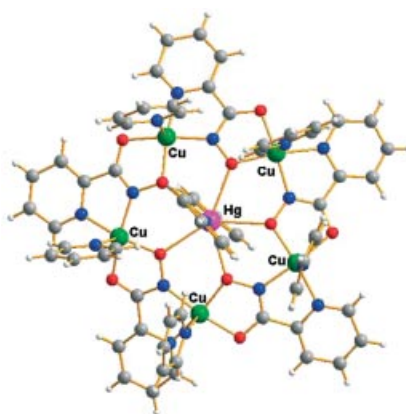
Metallacrowns

S. H. Seda, J. Janczak,
J. Lisowski* 3015–3022



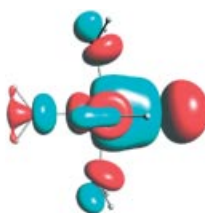
Synthesis and Structural Characterisation of Copper(II) 15-Metallacrown-5 Complexes with Pb^{II} , Hg^{II} , Ag^{I} , Na^{I} and Y^{III} Central Metal Ions

Keywords: Metallamacrocycles / Hydroxamic acids / Lead / Mercury / Copper / Crystal structure



New copper(II) 15-metallacrown-5 complexes $[\text{MCu}_5\text{L}_5]\text{X}_n$ (H_2L is 2-picoline- or (*S*)-phenylalaninehydroxamic acid and M is the central metal ion} have been characterised. The X-ray crystal structures of the Pb^{II} and Hg^{II} derivatives show that the 15-metallacrown-5 ring can adopt a distorted conformation in order to adjust to the size of central metal ion.

An empty low-lying $3\sigma^*$ orbital is responsible for the catalytic activity of oxidoiron(IV) compounds in alkane hydroxylation. We study the influence of the ligand environment on the spin state and catalytic activity of simple systems, correlating these properties to the strength of the electron donation from the ligands, and in particular, we prove that systems with *weak* equatorial and axial donor ligands show superior catalytic activity.

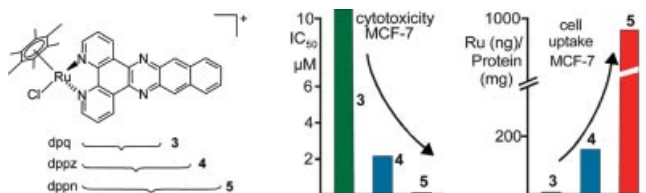


L. Bernasconi,* M. J. Louwerse,
E. J. Baerends* 3023–3033

The Role of Equatorial and Axial Ligands in Promoting the Activity of Non-Heme Oxidoiron(IV) Catalysts in Alkane Hydroxylation

Keywords: Density functional calculations / Fenton reaction / Alkanes / Hydroxylation / High-valent oxidoiron(IV) systems / Push effect

Organoruthenium(II) Complexes



The DNA binding of polypyridyl (pp) complexes such as **3–5** has been studied by spectroscopic and viscometric techniques. Intercalation is observed for dpq and dppz complexes but not for chloro complexes

with smaller (phen,tap) or larger (dppn) ligands. The cytotoxicities of the complexes correlate with the level of cellular ruthenium uptake in the order of increasing ligand size.

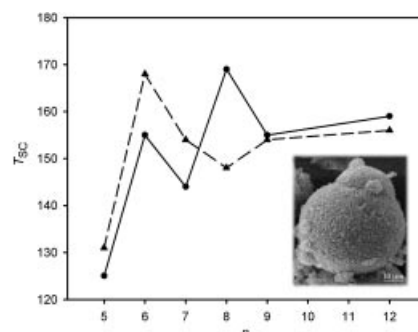
S. Schäfer, I. Ott, R. Gust,
W. S. Sheldrick* 3034–3046

Influence of the Polypyridyl (pp) Ligand Size on the DNA Binding Properties, Cytotoxicity and Cellular Uptake of Organoruthenium(II) Complexes of the Type $[(\eta^6\text{-C}_6\text{Me}_6)\text{Ru}(\text{L})(\text{pp})]^n$ [L = Cl, $n = 1$; L = $(\text{NH}_2)_2\text{CS}$, $n = 2$]

Keywords: Ruthenium / Iridium / DNA / Antitumour agents / Arene ligands

Iron(II) Spin Crossover

Parity effect and anion influence found at the spin-crossover behaviour of iron(II) coordination polymers and visualised by systematic magnetic and magneto-optical investigations are based on structural variations.

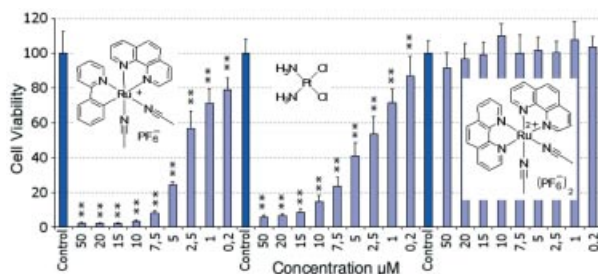


A. Absmeier, M. Bartel, C. Carbonera,
G. N. L. Jameson, F. Werner,
M. Reissner, A. Caneschi, J.-F. Létard,
W. Linert* 3047–3054

Mutual Influence of Spacer Length and Noncoordinating Anions on Thermal and Light-Induced Spin-Crossover Properties of Iron(II)– α,ω -Bis(tetrazol-1-yl)alkane Coordination Polymers

Keywords: Iron(II) / Magnetic properties / Coordination polymers / Photomagnetism / Spin crossover

Metallacyclic Antitumour Agents



Several cycloruthenated compounds have been evaluated for their *in vitro* cytotoxicity against a series of human and murine tumor cells. Some of these organometallic compounds that contain a chemically sta-

ble Ru–C σ bond stabilized by intramolecular coordination of a nitrogen atom displayed interesting *in vitro* cytotoxic active ties against tumor cells of the same order of magnitude as cisplatin.

L. Leyva, C. Sirlin,* L. Rubio,
C. Franco, R. Le Lagadec, J. Spencer,
P. Bischoff, C. Gaiddon, J.-P. Loeffler,
M. Pfeffer* 3055–3066

Synthesis of Cycloruthenated Compounds as Potential Anticancer Agents

Keywords: Bioinorganic chemistry / Ruthenium / Metallacycles / Antitumor agents

CONTENTS

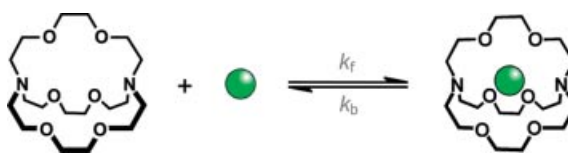
Ion Exchange Kinetics

E. Pasgreta, R. Puchta, A. Zahl,
R. van Eldik* 3067–3076



Ligand Exchange Processes on Solvated Lithium Cations, V. Complexation by Cryptands in Acetone as Solvent

Keywords: Lithium / Cryptands / Acetone / Exchange mechanism



^7Li NMR was used to study Li^+ exchange between the cryptands C222 and C221 and acetone as solvent, as a function of ligand-to-metal mol ratio, temperature and pres-

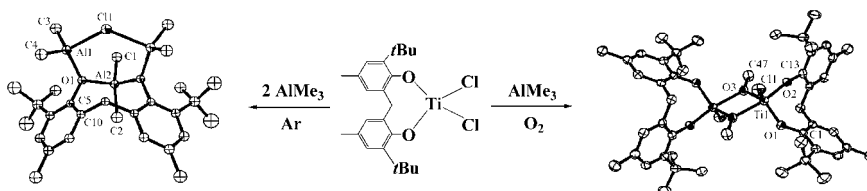
sure. The reported activation parameters suggest that the exchange reaction follows an associative interchange mechanism.

Organometal(IV) Halides with AlMe_3

D. Zhang* 3077–3082

Facile Formation of Hexacyclic $[\text{Al}_3\text{O}_2\text{Cl}]$ Aluminum and Alkoxide-Bridged Titanium Complexes: Reactions of AlMe_3 with $[\text{Ti}(\text{L})\text{Cl}_2]$ [$\text{L} = 2,2'$ -Methylenebis(6-*tert*-butyl-4-methylphenolato)]

Keywords: Aluminum complexes / Titanium complexes / Trimethylaluminum



The dichloride titanium complex $[\text{Ti}(\text{L})\text{Cl}_2]$ [$\text{L} = 2,2'$ -methylenebis(6-*tert*-butyl-4-methylphenolato)] (1) reacted with AlMe_3 in a 1:2 ratio under argon to give the trimetallic compound $[(\text{L})(\text{AlMe}_2)_3(\mu_2\text{-Cl})]$ (2) with a

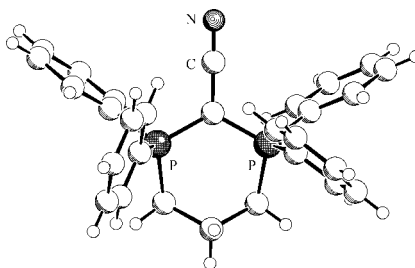
symmetrical six-membered ring $[\text{Al}_3(\mu_2\text{-O})_2(\mu_2\text{-Cl})]$, while the reaction of 1 equiv. AlMe_3 under O_2 afforded the oxygen-insertion product $[(\text{L})\text{TiCl}_2(\mu_2\text{-OMe})_2]$ (4) with a five-coordinate metal center.

Stabilized Ylides

L. Braun, G. Kehr, T. Blömker, R. Fröhlich,
G. Erker* 3083–3090

Preferred Phosphorus Ylide Formation Upon Alkylation of Lithiobis(diphenylphosphanyl)acetonitrile

Keywords: Chelates / Phosphane ligands / Carbanions / Ylides / Alkylation



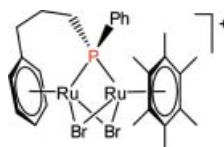
The reaction of lithiobis(diphenylphosphanyl)acetonitrile, which exhibits an unusual monomeric structure in the crystal form, with a variety of alkyl halides proceeds exclusively by alkylation at phosphorus to yield mono- or dialkylated ylidic products.

Chiral-at-Phosphorus Complexes

M. J.-L. Tschan, G. Süß-Fink*,
F. Chérioux, B. Therrien 3091–3100

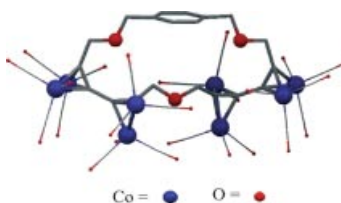
Dinuclear (Arene)ruthenium Complexes Containing a Chiral-at-Phosphorus Phosphanido Bridge

Keywords: Arene ligands / Ruthenium / Tethered complexes / P ligands / Hydride ligands



The cation $[(\eta^6\text{-arene})\text{Ru}_2(\mu_2\text{-H})_3]^+$ reacts with $\text{PPh}_2(\text{CH}_2)_3\text{Ph}$ to give the phosphanido complex $[(\eta^6\text{-arene})\text{Ru}_2\{\mu_2\text{-PPh}(\text{CH}_2)_3\text{Ph}\}(\mu_2\text{-H})_2]^+$ which, upon heating in bromobenzene, converts into $[(\eta^6\text{-arene})\text{Ru}_2\{\mu_2\text{-PPh}(\text{CH}_2)_3\text{-}\eta^6\text{-Ph}\}(\mu_2\text{-Br})_2]^+$, the first chiral-at-phosphorus diruthenium complex.

Nicholas-type reaction strategies are used to promote the formation of a range of large crown-type macrocycles incorporating coordinated 1,3-diynes and a range of unsaturated donor units.



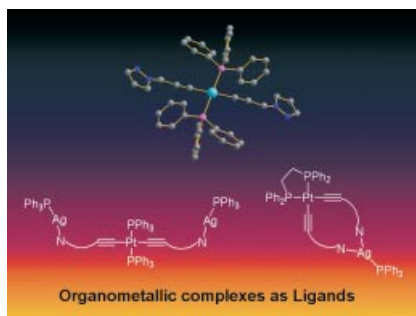
**L. J. Hope-Weeks,* M. J. Mays,
G. A. Solan*** 3101–3114

Coordinated 1,3-Diyne Diols as Organo-metallic Building Blocks for Large Macro-cycles Containing Oxygen and Unsaturated Donor Units

Keywords: Macrocycles / Cobalt complexes / Oxygen / Alkynes / Nicholas reaction

Dimetallic Pt^{II}/Ag^I Complexes

A series of alkynyl platinum(II) complexes *trans*-[Pt(C≡CCH₂R)₂(PPh₃)₂] and *cis*-[Pt(C≡CCH₂R)₂(dppe)] containing C-bonded propargyl derivatives of 2-hydroxypyridine, 2-pyridinethiol, 2-hydroxy-4-methylquinoline, phthalimide and pyrazole were prepared and shown to act as organometallic ligands to form mixed-metal Pt^{II}/Ag^I complexes.



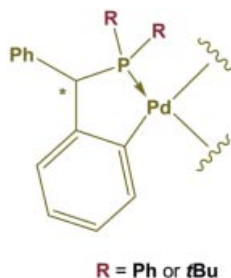
**F. Mohr,* A. Mendiá,*
M. Laguna** 3115–3123

Platinum(II) Alkynyl Complexes Containing *N*- and *S*-Propargylated Ligands: Synthesis, Structures and Formation of Pt^{II}/Ag^I Coordination Compounds

Keywords: Platinum / Alkynes / Silver / Dimetallic / Coordination complexes

Chiral Palladacycles

A novel phosphapalladacycle was prepared from the ligand (diphenylmethyl)diphenylphosphane in the optically active form. This phosphapalladacycle was noted to behave differently with respect to the analogous phosphapalladacycle prepared from (diphenylmethyl)di-*tert*-butylphosphane in terms of palladacycle conformational flexibility, regioselectivity and stability of the Pd–C bond.



**J. K.-P. Ng, S. Chen, G.-K. Tan,
P.-H. Leung*** 3124–3134

Substituent Effects on the Stereoelectronic and Chemical Properties of a Novel Phosphapalladacycle

Keywords: Palladium / Phosphane ligands / Chirality / NMR spectroscopy / Substituent effects

If not otherwise indicated in the article, papers in issue 18 were published online on June 18, 2007