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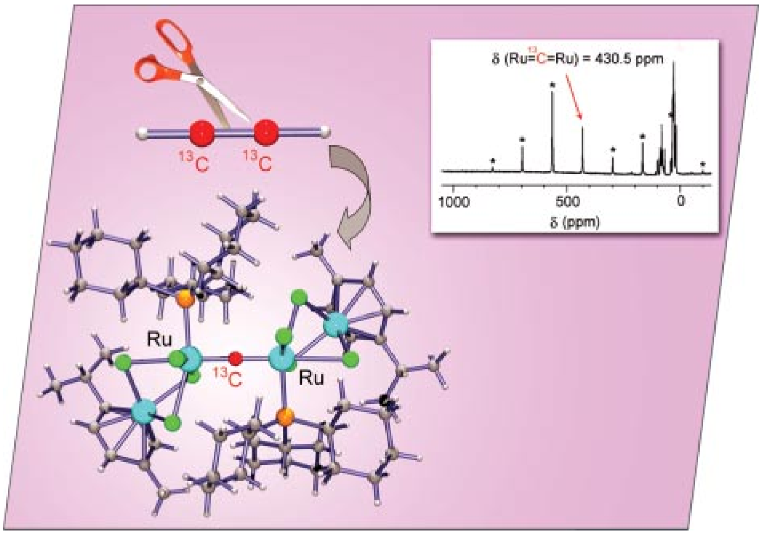
EU ChemSoc

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 structure of a novel ruthenium complex with a μ-carbide ligand. This complex was obtained in an unexpected reaction from $[(p\text{-cymene})Ru(\mu\text{-}Cl)_3RuCl(C_2H_4)(PCy_3)]$ and acetylene. The solid-state ^{13}C NMR spectrum of a μ-carbide complex obtained from fully ^{13}C-labeled acetylene shows a strong peak at $\delta = 430.5$ ppm. This confirms that acetylene was the source of the μ-carbide ligand and that the complex was formed by cleavage of the carbon triple bond. More details about this unusual reaction are described in the Short Communication by K. Severin et al. on p. 367ff.



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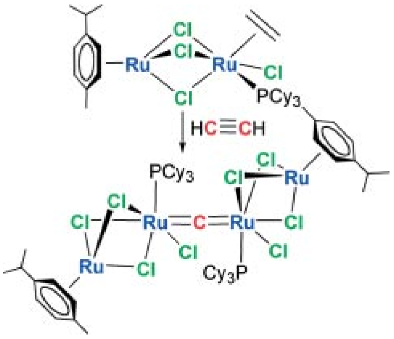
SHORT COMMUNICATIONS

Organometallic Chemistry

E. Solari, S. Antonijevic, S. Gauthier, R. Scopelliti, K. Severin* .... 367−371

Formation of a Ruthenium μ-Carbide Complex with Acetylene as the Carbon Source

Keywords: Carbide ligands / Organometallic complexes / Ruthenium / Solid-state NMR spectroscopy / Vinylidene complexes



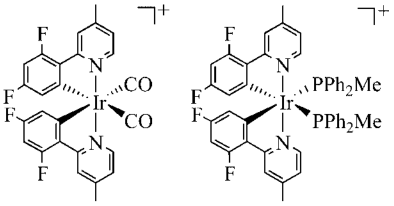
A tetranuclear μ-carbide complex was obtained by reaction of the dinuclear ruthenium complex [(*p*-cymene)Ru(μ-Cl)$_3$RuCl(C_2H_4)(PCy_3)] with acetylene as evidenced by single-crystal X-ray analysis as well as by solid-state NMR spectroscopy. Experiments with fully ^{13}C-labelled acetylene demonstrate that acetylene was the carbon source for the carbide ligand.

Light-Emitting Materials

C. S. Chin,* M.-S. Eum, S. y. Kim, C. Kim, S. K. Kang .... 372−375

Blue-Light-Emitting Complexes: Cationic (2-Phenylpyridinato)iridium(III) Complexes with Strong-Field Ancillary Ligands

Keywords: Iridium / Luminescence / Blue-emitter / Strong field ligand



2aF$_2$Me **2bF$_2$Me**

Blue-light emission is obtained from cationic complexes **2a**F$_2$Me and **2b**F$_2$Me which contain strong-field ancillary ligands, CO and PPh$_2$Me, and a modified ppy ligand, F$_2$Meppy.

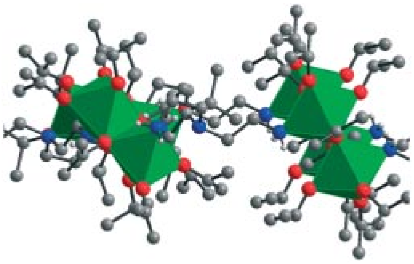
FULL PAPERS

Ti and Zr Coordination Polymers

H. Fric, M. Puchberger, U. Schubert* .... 376−383

Two- and Three-Dimensional Coordination Polymers From the Reaction of Bis- and Tris(2-aminoethyl)amine with Titanium and Zirconium Alkoxides

Keywords: Titanium / Zirconium / Coordination polymers / N ligands



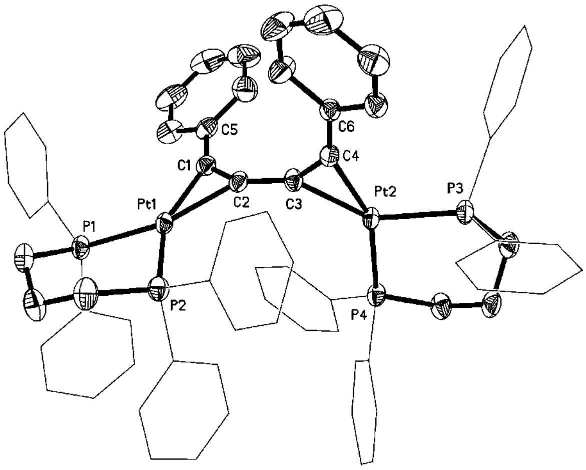
The chain-like coordination polymers [M_2(O*i*Pr)$_8$($H_2NCH_2CH_2NHCH_2CH_2NH_2$)]$_\infty$, where only the NH_2 groups of the amine are coordinated to the M_2(O*i*Pr)$_8$ units, are formed by reaction of the parent alkoxides [M(O*i*Pr)$_4$] (M = Ti, Zr) with an amine. These adducts dissociate into the starting compounds upon dissolution in CD_2Cl_2 but slowly re-form the solid-state structures over several weeks.

Luminescent Platinum Complexes

K. Zhang, J. Hu, K. C. Chan, K. Y. Wong, J. H. K. Yip* 384–393

Synthesis, Structures, and Electronic Spectroscopy of Luminescent Acetylene- and (Buta-1,3-diyne)platinum Complexes

Keywords: Spectroscopy / Luminescence / Platinum / Acetylene / Charge-transfer



The absorption and emission spectroscopy of luminescent diphenylaceylene- and (buta-1,3-diyne)-Pt^0 complexes (L)Pt[(1,2-η^2)-R-(C≡C)$_n$-R] and [(L)Pt]$_2$[μ-(1,2-η^2):(3,4-η^2)-R-(C≡C)$_2$-R] [R = Ph or CH$_3$, L = dppp or (PPh$_3$)$_2$, n = 1 or 2] were studied. The complexes display intense metal-to-ligand-charge-transfer (MLCT) absorptions and long-lived ^{3}MLCT emissions.

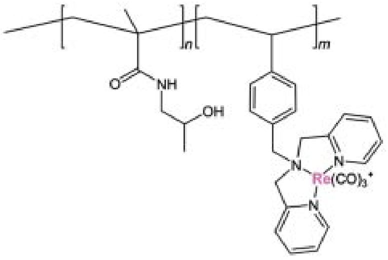
Medicinal Bioorganometallic Chemistry

P. C. Kunz,* N. E. Brückmann, B. Spingler 394–399

Towards Polymer Diagnostic Agents – Copolymers of *N*-(2-Hydroxypropyl)-methacrylamide and Bis(2-pyridylmethyl)-4-vinylbenzylamine: Synthesis, Characterisation and Re(CO)$_3$-Labelling

Keywords: Rhenium / Carbonyl ligands / Polymer diagnostics / Copolymers / Cancer / Diagnosis / EPR effect

Copolymers of bis(2-pyridylmethyl)-4-vinylbenzylamine and *N*-(2-hydroxypropyl)-methacrylamide (HPMA) were prepared and characterised. Their capability of inert coordination towards Re^I(CO)$_3$ is demonstrated and a possible application in cancer diagnosis discussed.



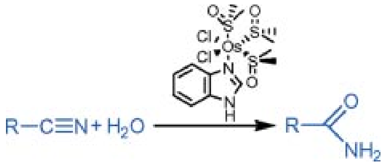
Catalytic Hydration of Chloronitriles

I. N. Stepanenko, B. Cebrián-Losantos, V. B. Arion,* A. A. Krokhin, A. A. Nazarov, B. K. Keppler* 400–411

The Complexes [OsCl$_2$(azole)$_2$(dm*s*o)$_2$] and [OsCl$_2$(azole)(dm*s*o)$_3$]: Synthesis, Structure, Spectroscopic Properties and Catalytic Hydration of Chloronitriles

Keywords: Osmium / N ligands / Homogeneous catalysis / Hydration

Two families of mixed (azole)(chloro)(dimethyl sulfoxide)osmium(II) complexes, viz., *trans,cis,cis*-[Os^{II}Cl$_2$(azole)$_2$(dmso)$_2$] and *cis,fac*-[Os^{II}Cl$_2$(azole)(dmso)$_3$], where azole = indazole, pyrazole, benzimidazole and imidazole, have been prepared and fully characterised. The products catalyse the hydration of tri- and dichloroacetonitrile with high selectivity.



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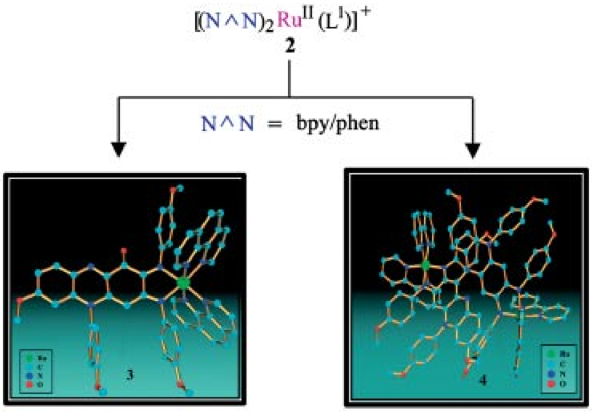
Ruthenium-Promoted Reactions

P. Banerjee, G. Mostafa, A. Castiñeiras, S. Goswami* .... 412−421

Two Novel Reactions of a Ruthenium-Coordinated Phenazine − Oxidative Aromatic Ring Hydroxylation and Dimerization via a New C−N Bond Formation

Keywords: Metal-mediated reaction / Phenazine / Ruthenium / Redox chemistry



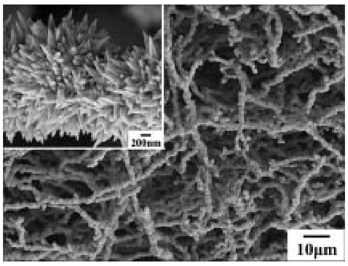
Ruthenium-mediated and unprecedented chemical transformations of a 2-amino-3-iminophenazine moiety via C−H activation are reported. The coordinated phenazine ligand undergoes oxidative hydroxylation and dimerization with the formation of a new C−N bond to produce the compounds **3** and **4**, respectively.

Nickel-Based Microwires

X. M. Ni, Q. B. Zhao, Y. F. Zhang, H. G. Zheng* .... 422−428

Reticular Nickel Microwires with Assembled Nanostructures: Synthesis, Magnetism and Catalysis for the Growth of Carbon Nanotubes

Keywords: Nickel / Nanostructures / Chemical reduction / Crystal growth



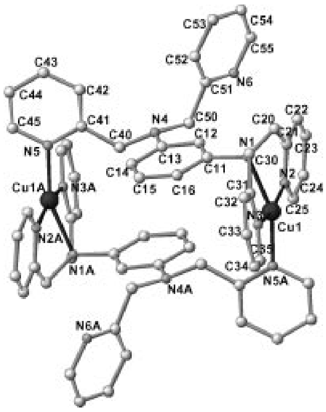
Reticular nickel microwires assembled from thorn-like nanocrystals are fabricated by a simple, complex-assisted chemical reduction route that does not require the use of surfactants or an external magnetic field. These nickel nanostructures exhibit high catalytic efficiency for the growth of carbon nanotubes in pyrolyzing acetone.

A Versatile Ligand in Coordination Chemistry

S. Foxon, J.-Y. Xu, S. Turba, M. Leibold, F. Hampel, F. W. Heinemann, O. Walter, C. Würtele, M. Holthausen, S. Schindler* .... 429−443

Syntheses, Characterization and Reactivity of Iron(II), Nickel(II), Copper(II) and Zinc(II) Complexes of the Ligand *N,N,N′,N′*-Tetrakis(2-pyridylmethyl)benzene-1,3-diamine (1,3-tpbd) and Its Phenol Derivative 2,6-Bis[bis(2-pyridylmethyl)amino]-*p*-cresol (2,6-tpcd)

Keywords: Iron / Copper / Zinc / Ligand effects

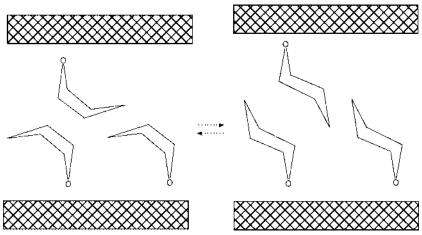


Redox active metal centers such as iron or copper ions demonstrate that *N,N,N′,N′*-Tetrakis(2-pyridyl methyl)benzene-1,3-diamine (1,3-tpbd) is a non-innocent ligand. Theoretical calculations support the formation of a dinuclear side-on copper peroxo complex during the reaction of the copper(I) complex with dioxygen. Most interestingly is a reaction if one equivalent of Cu(II) together with one equivalent of Zn(II) is reacted with one equivalent of 1,3-tbpd. Here $[Cu_2(1,3\text{-tpbd})_2(H_2O)_2](ClO_4)_4$ a so called “dimetallocyclophane” formed.

Intercalated Vanadyl Phosphate

K. Melánová, L. Beneš,* V. Zima, E. Černošková, J. Brus, M. Urbanová, M. Trchová, J. Dybal 444–451

Thermal Behavior of Tetrahydropyran-Intercalated $VOPO_4$: Structural and Dynamics Study



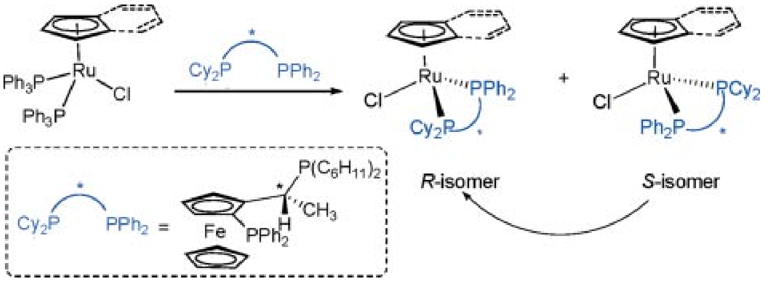
The thermal behavior of tetrahydropyran-(THP-)intercalated $VOPO_4$ was probed by a combination of experimental methods (XRD, DSC, FTIR, solid-state NMR) and quantum chemical calculations. Two temperature-induced transitions were detected and all polymorphs exhibit a high degree of molecular order and tight packing of THP in $VOPO_4$.

Keywords: Intercalations / NMR spectroscopy / IR spectroscopy / Thermal behavior / Quantum chemical calculations

Epimerisation of CpRu(Josiphos)Cl

S. Y. Ng, G. Fang, W. K. Leong,* L. Y. Goh,* M. V. Garland 452–462

Reactivity and X-ray Structural Studies in Ligand Substitution of [Cp/(Ind)Ru(dppf)Cl] – Epimerisation in [Cp/(Ind)Ru(Josiphos)Cl] {Cp = η^5-C_5H_5, Ind = η^5-C_7H_9, dppf = 1,1′-Bis(diphenylphosphanyl)ferrocene, Josiphos = (*R*)-(–)-1-[(*S*)-2-(Diphenylphosphanyl)ferrocenyl]ethyldicyclohexylphosphane}



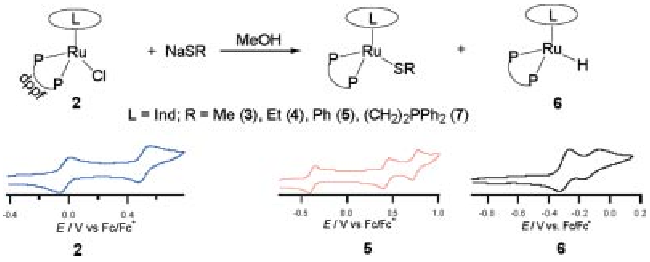
Phosphane substitution in [(Cp/Ind)Ru$(PPh_3)_2$Cl] with the ferrocene-based chiral diphosphane ligand (*R*)-(*S*)-Josiphos led to the formation of (*R*) and (S) diastereomers, of which the thermodynamically stable (*R*) isomer was isolated pure.

Keywords: Indenyl / Ruthenium / dppf / Josiphos / Epimerisation / Phosphanes

(Indenyl)ruthenium Thiolate Complexes

S. Y. Ng, W. K. Leong,* L. Y. Goh,* R. D. Webster 463–471

(Indenyl)ruthenium Complexes Containing 1,1′-Bis(diphenylphosphanyl)ferrocene (dppf) and Thiolato Ligands: Synthesis, X-ray Structure Analysis, Electrochemistry and Magnetic Studies



Chloro substitution of **2** with thiolates gave the thiolato derivatives, as well as the hydride **6** in R- and solvent-dependent yields. Cyclic voltammetry showed orders of ease of oxidation, as follows: L: Cp* < Ind < Cp and (diphos): dppm < dppe/dppf < $(PPh_3)_2$

Keywords: (Indenyl)ruthenium / Thiolates / dppf / Cyclic voltammetry / ESR / Ruthenium

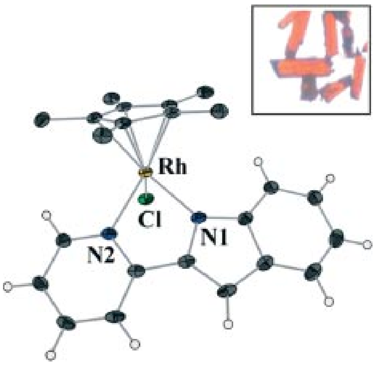
CONTENTS

Amido–Imine Chelates

B. Neumann, C. Krinninger,
I.-P. Lorenz* 472–480

Synthesis, Structures and Comparison of Neutral Complexes Formed by 2-(2′-Pyridyl)indole and d^6 Transition Metals

Keywords: Metallacycles / N ligands / Rhenium / Ruthenium / Rhodium / Iridium



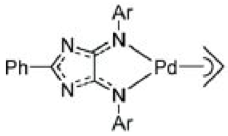
The 2-(2′-pyridyl)indolide anion (pyind) coordinates as an *N*,*N*′-bonded chelate ligand towards several suitable d^6 complex fragments of rhenium(I), ruthenium(II), rhodium(III) and iridium(III) to give new pyind complexes with potential catalytic activity.

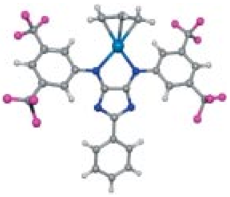
Metallacycles

J. Blumhoff, R. Beckert,* D. Walther,
S. Rau, M. Rudolph, H. Görls,
W. Plass 481–486

Merocyanine-Like Chromophores as Ligands for Catalytic Active Metals of Group VIII

Keywords: N ligands / Chromophores / Palladium / Nickel / Electrochemistry





The synthesis, characterization and electrochemical properties of palladium complexes based on merocyanine-like ligands are described.