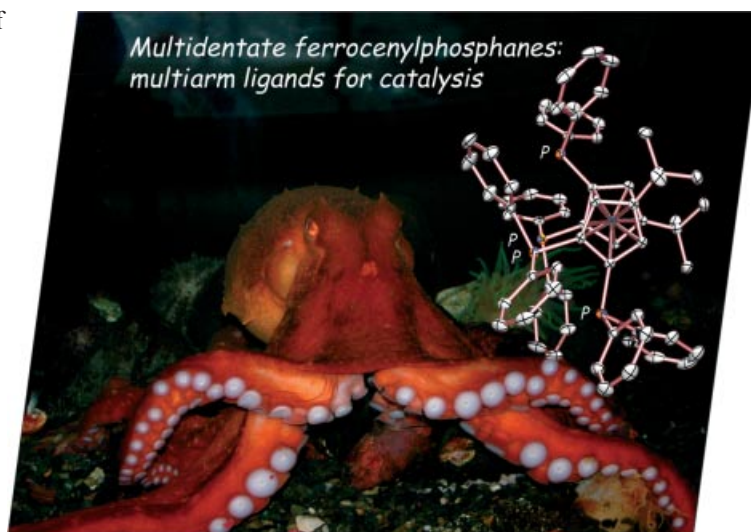




The EUChemSoc Societies have taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry*. Three further EUChemSoc Societies (Austria, Czech Republic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

COVER PICTURE

The cover picture shows an X-ray illustration of the multidentate ferrocenylpolyphosphane 1,1',2,2'-tetrakis(diphenylphosphanyl)-4,4'-di-*tert*-butylferrocene. The cisoid conformation of the molecule, evidenced at the solid state, is conserved in solution; the phosphorus arrangement led to a rarely demonstrated multiple-coordination behaviour towards palladium, possibly useful in ultra-low catalyst loading reactions due to an improved stabilization of the metal atom. The multiple phosphane arms and their orientation resemble the elegant and intelligent creature that is the Giant Pacific Octopus (specimen from the Alaska SeaLife Centre in Seward, photo published with the kind permission of Mollie Tubbs and Jason Wettstein). The catalytic performance in palladium cross-coupling at ultra-low catalyst loading is presented in the Microreview by J.-C. Hierro et al. on p. 3767ff.



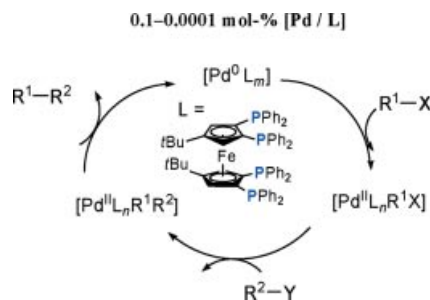
MICROREVIEW

C–C Cross-Coupling Reactions

J.-C. Hierso,* M. Beaupérin,
P. Meunier 3767–3780

Ultra-Low Catalyst Loading as a Concept in Economical and Sustainable Modern Chemistry: The Contribution of Ferrocenylpolyphosphane Ligands

Keywords: Sustainable chemistry / Homogeneous catalysis / P ligands / Ferrocenylphosphanes / Cross-coupling / Multidentate ligands



The search for catalytic longevity and ultra-low catalyst loadings on the basis of multidentarity effects and robustness of new ferrocenylphosphane ligands were focused on high-value palladium-catalyzed C–C cross-coupling reactions. Low-loading catalysis was also explored with success for C–N cross-coupling in the allylic amination of achiral substrates.

SHORT COMMUNICATIONS

Mo Poly(methimazolyl)borates

A. F. Hill,* N. Tshabang,
A. C. Willis 3781–3785

Poly(methimazolyl)borate Alkyne Complexes of Molybdenum and Tungsten

Keywords: Alkyne / Molybdenum / Tungsten / Methimazolylborates / Scorpionates



Synthetic routes are reported for the complexes $[\text{MI}(\text{alkyne})(\text{CO})\{\text{H}_n\text{B}(\text{mt})_{4-n}\}]$ (mt = methimazolyl; $n = 1, 2$; $\text{M} = \text{Mo}, \text{W}$). The reaction of $[\text{MoI}(\text{PhC}\equiv\text{CPh})(\text{CO})\{\text{HB}(\text{mt})_3\}]$ with $\text{Na}[\text{HB}(\text{mt})_3]$ provides $[\text{Mo}(\text{PhC}\equiv\text{CPh})(\text{CO})\{\text{HB}(\text{mt})_3\}_2]$ which features both $\kappa^3\text{-S,S',S''}$ (mauve) and $\kappa^1\text{-S}$ (cyan) coordination modes.

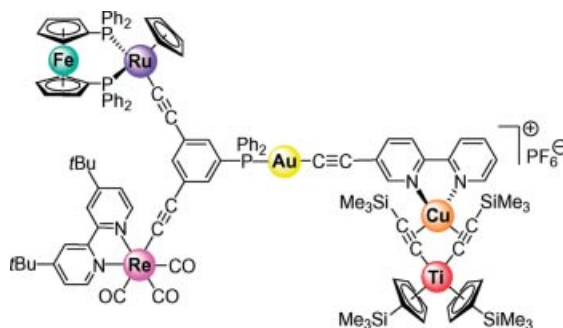
Heteromultimetallic Complexes

R. Packheiser,
H. Lang* 3786–3788



The First Heterohexametallic Transition-Metal Complex

Keywords: Heteromultimetallic / Transition metal / Acetylides / Organometallic π -tweezers / Transmetalation / Mass spectrometry



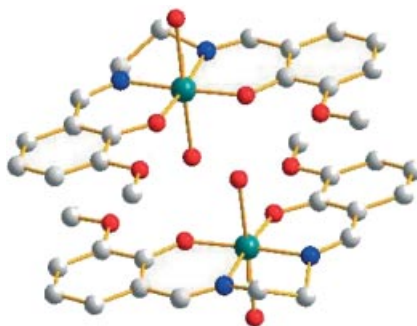
The synthesis of a heterohexamuclear Fe–Ru–Re–Au–Cu–Ti metal complex and its characterisation by ^1H , $^{31}\text{P}\{^1\text{H}\}$ NMR and

IR spectroscopy, elemental analysis and ESI mass spectrometry are reported.

FULL PAPERS

Supramolecular Glue

Perchlorate counterions were found to act as supramolecular glue through hydrogen-bonding interactions, promoting the assembly of μ -aqua manganese–Schiff-base dimers into a 1D network of complexes.

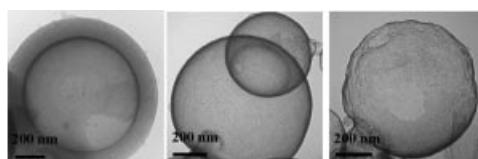


M. R. Bermejo, M. I. Fernández,*
E. Gómez-Fórneas, A. González-Noya,
M. Maneiro,* R. Pedrido,
M. J. Rodríguez 3789–3797

Self-Assembly of Dimeric Mn^{III} –Schiff-Base Complexes Tuned by Perchlorate Anions

Keywords: Manganese / Self-assembly / Anions / Schiff bases / Peroxidase

Hollow Mesoporous Spheres



Mesoporous Carbon Silica Metal Oxide hollow spheres

PF–PEO polymer blend can be used as a novel organic template to synthesize mesoporous carbon or silica hollow spheres. The

mesoporous carbon hollow spheres can act as a hard template for the preparation of mesoporous oxide hollow spheres.

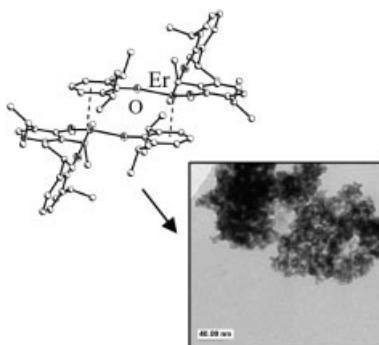
C.-Y. Chang-Chien, C.-H. Hsu, T.-Y. Lee,
C.-W. Liu, S.-H. Wu, H.-P. Lin,*
C.-Y. Tang, C.-Y. Lin 3798–3804

Synthesis of Carbon and Silica Hollow Spheres with Mesoporous Shells using Polyethylene Oxide/Phenol Formaldehyde Polymer Blend

Keywords: Polymer blends / Mesoporous materials / Metal oxides / Organic templates

Amphoteric Dopants

The reaction of $Er[N(SiMe_3)_2]_3$ with a series of alcohols (HOR) in selected solvents led to the isolation of a family of $Er(OR)_3$ compounds (**1–19**, **11** shown). Representative members of the $Er(OR)_3$ precursors were used for the production of a PErZT precursor solution, which was subsequently used to generate thin films and nanoparticles as well as Er_2O_3 nanoparticles (shown).



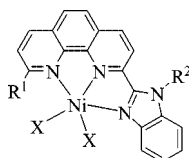
T. J. Boyle,* L. A. M. Ottley, L. N. Brewer,
J. Sigman, P. G. Clem,
J. J. Richardson 3805–3815

Structurally Characterized Erbium Alkoxides for Use as an Amphoteric Dopant in PErZT Ceramic Thin Film and Nanoparticles

Keywords: Ceramics / Perovskites / Nanomaterials / Lanthanide alkoxides / PZT

Ethylene Oligomerization

Nickel(II) complexes ligated by 2-(benzimidazol-2-yl)-1,10-phenanthrolines were synthesized and characterized. Upon activation with Et_2AlCl , these complexes exhibited excellent activities for ethylene oligomerization with high selectivities for 1-butene.



M. Zhang, S. Zhang, P. Hao, S. Jie,
W.-H. Sun,* P. Li, X. Lu 3816–3826

Nickel Complexes Bearing 2-(Benzimidazol-2-yl)-1,10-phenanthrolines: Synthesis, Characterization and Their Catalytic Behavior Toward Ethylene Oligomerization

Keywords: Nickel / Tridentate complexes / Phenanthrolines / Ethylene oligomerization / Oligomerization

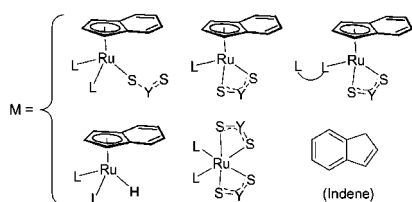
CONTENTS

Ruthenium Complexes

S. Y. Ng, J. Tan, W. Y. Fan, W. K. Leong,
L. Y. Goh,* R. D. Webster 3827–3840



Synthetic, X-ray Diffraction, Electrochemical, and Density Functional Theoretical Studies of (Indenyl)ruthenium Complexes Containing Dithiolate Ligands



Halide substitution of the complexes $[(\text{Ind})\text{Ru}(\text{L}_2)\text{X}]$ [$(\text{L}_2) = \text{dppf}$, $\text{X} = \text{Cl}$; $(\text{L}_2) = \text{dppm}$, $\text{X} = \text{Cl}$; and $(\text{L}_2) = (\text{CO})_2$, $\text{X} = \text{I}$] with the 1,1-dithiolates $^-\text{S}_2\text{Y}$ ($\text{Y} = \text{CNR}_2$, COR , PR_2) gives rise to a product mixture (M) dependent on the nature of L_2 , S_2Y , and the solvent.

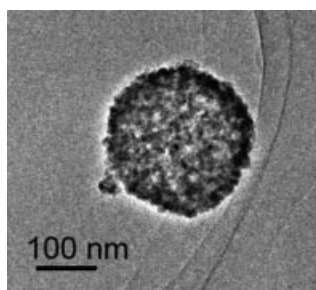
Keywords: Ruthenium complexes / Dithiolates / Cyclic voltammetry / Density functional calculations

Hollow Nanospheres

M. Yang, Y. Zhang, G. Pang,*
S. Feng 3841–3844

Preparation of Cu_2O Hollow Nanospheres under Reflux Conditions

Keywords: Cuprous oxide / Nanospheres / Reflux conditions



Cuprous oxide hollow nanospheres with diameters of 100–200 nm were prepared by heating a solution of copper acetate and hydrazine as a reductant in 2-propanol at reflux. The UV/Vis diffuse reflectance spectrum indicates that the optical absorption edge of the hollow Cu_2O nanospheres is redshifted relative to their solid counterparts.

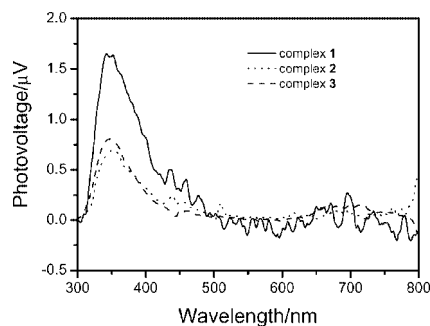
Mn^{II} Supramolecules

L.-P. Sun, S.-Y. Niu,* J. Jin,
L. Zhang 3845–3852



Crystal Structure and Surface Photovoltage Properties of Mn^{II} Coordination Supramolecules

Keywords: Manganese / Hydrogen bonds / Surface photovoltage spectroscopy



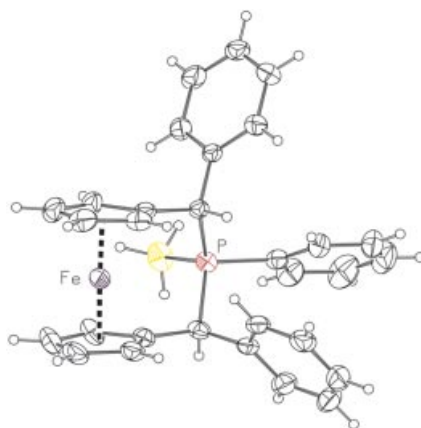
Three Mn^{II} coordination supramolecules were hydrothermally synthesized and characterized by crystallography and SPS techniques. Complexes 1–3 exhibit positive SPV response in the range of 300–800 nm; the differences in intensities are attributable to differences in the structures of the complexes. They also possess *p*-type semiconductor characteristics.

Ferrocenophane-Based Phosphanes

N. Fleury-Brégeot, A. Panossian,
A. Chiaroni, A. Marinetti* 3853–3862

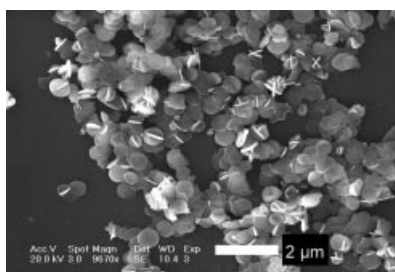
Stereospecific Synthesis, Structural Characterisation and Resolution of 2-Phospha[3]ferrocenophane Derivatives – a New Chiral Scaffold

Keywords: Phosphane ligands / Ferrocenophane / Chiral resolution / Palladium



A stereospecific synthetic approach gives access to 2-phospha[3]ferrocenophane derivatives containing stereogenic carbon atoms in the three-atom bridge. The first chiral phosphane of this series has been obtained in enantiomerically pure form by resolution with a chiral cyclopalladate complex.

Singly crystalline $\text{LaF}_3\text{:Eu}^{3+}$ nanodisks with a hexagonal structure were synthesized by a simple method. The mechanism of formation of the nanodisks was explored; furthermore, the size of the disks can be simply moderated by varying the concentration of the initial reactants.



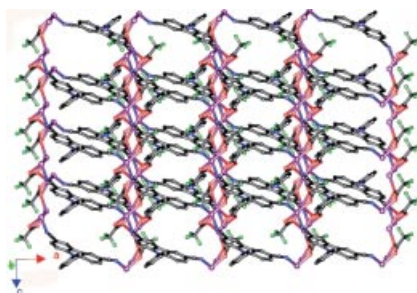
L. Zhu, J. Meng,
X. Cao* 3863–3867

Facile Synthesis and Photoluminescence of
Europium Ion Doped LaF_3 Nanodisks

Keywords: Materials science / Crystal
growth / Rare earths / Fluorescence

Silver Coordination Polymers

One rigid bent bridging ligand with highly planar π -conjugated spacers, 3,6-dicyano-9-phenylcarbazole (dcphcz), was designed and synthesized. The coordination of the ligand dcphcz with a series of Ag^I salts with different counterions has been investigated. Four new Ag-containing coordination polymers with different polymeric motifs, $\{[\text{Ag}(\text{dcphcz})]\text{BF}_4\}_n$, $\{[\text{Ag}(\text{dcphcz})]\text{ClO}_4\}_n$, $\{[\text{Ag}(\text{dcphcz})][\text{Ag}_2(\text{dcphcz})(\text{H}_2\text{O})_2](\text{SO}_3\text{CF}_3)_3\cdot\text{C}_6\text{H}_6\cdot(\text{H}_2\text{O})_2\}_n$, and $[\text{Ag}_2(\text{dcphcz})(\text{CF}_3\text{COO})_2]_n$, were obtained.



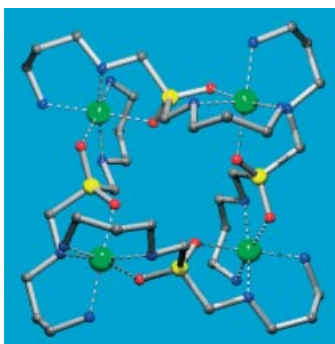
K.-J. Wei, J. Ni, J. Gao, Y. Liu,*
Q.-L. Liu* 3868–3880

Self-Assembly of Silver(I) Coordination
Polymers from AgX ($\text{X} = \text{BF}_4^-$, ClO_4^- ,
 CF_3COO^- , and SO_3CF_3^-) and a Rigid
Bent 3,6-Dicyano-9-phenylcarbazole Li-
gand: The Templating Effect of Anions

Keywords: Silver / N ligands / Supra-
molecular chemistry / Luminescence / Coordi-
nation polymers / Metal-organic frame-
works

Aminophosphinic Acids

The acid–base properties of two tetra-aminophosphinic acid ligands and their complexation with Cu^{2+} , Ni^{2+} , and Zn^{2+} ions were studied by potentiometry. Both ligands behave similarly to linear tetra-amines. The phosphinic acid moiety shows weak coordination ability. In the solid state, nitrogen atoms coordinate the metal ions mostly in a square-planar fashion.



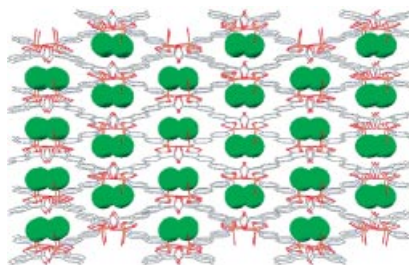
V. Kubiček,* I. Řehoř, J. Havlíčková,
J. Kotek, I. Císařová, P. Hermann,
I. Lukeš 3881–3891

Synthesis and Coordination Behavior of
Symmetrical Tetraamine Phosphinic Acids

Keywords: Aminophosphinates / Com-
plexes / Stability constants / Potentiometry

Hydrogen-Bonded Helices

Three metal–organic coordination polymers were synthesized under hydrothermal conditions. The bptc ligand takes part in three different coordination modes, and compound **1** exhibits a 3D network with 1D open channels that contain free solvent water molecules. Two kinds of chiral, helical, hydrogen-bonded chains exist in the neighboring holes.



G.-P. Yang, Y.-Y. Wang,* L.-F. Ma,
J.-Q. Liu, Y.-P. Wu, W.-P. Wu,
Q.-Z. Shi 3892–3898

Hydrothermal Syntheses and Characteri-
zations of Three Coordination Polymers
Based on Mixed Organic Ligands

Keywords: Copper / Manganese / Coordi-
nation polymers / Hydrogen bonds

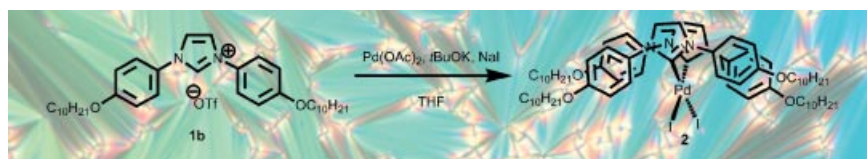
CONTENTS

Mesomorphic Compounds

J.-M. Suisse, L. Douce,*
S. Bellemin-Laponnaz, A. Maisse-François,
R. Welter, Y. Miyake,
Y. Shimizu 3899–3905

Liquid Crystal Imidazolium Salts: Towards Materials for Catalysis and Molecular Electronics

Keywords: liquid crystals / Imidazolium ions / Pd–carbenes / Homogenous catalysis / Conducting materials



The imidazolium ion exhibits liquid crystalline behaviour over a significant temperature range and serves as a N-heterocyclic carbene ligand for Pd-catalysed cross-coupling reactions. A lamellar crystal

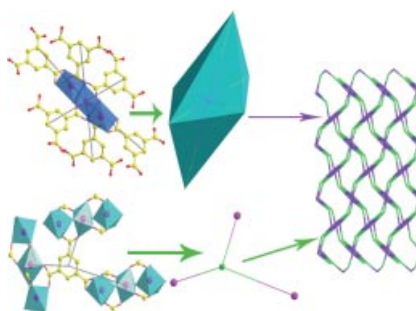
structure of the Pd^{II} *cis*-carbene with decyl tails was obtained, and the charged carrier mobilities of the C₁₀ salt in the smectic-A phase was measured.

Rutile Frameworks

F. Luo, Y.-x. Che,
J.-m. Zheng* 3906–3910

Rarely Decorated Rutile Frameworks Built from Triangular Organic Spacers and Distorted Octahedral Co₃ Building Blocks

Keywords: Solvothermal syntheses / Rutile / Cobalt / Polymers



The first exploration of the synthesis of metal–organic frameworks in solutions of dmsO resulted in rare noninterpenetrating decorated rutile frameworks with the (4.6²)₂(4².6¹⁰.8³) topology, built on three-connected organic spacers and six-connected Co₃ nodes.

If not otherwise indicated in the article, papers in issue 23 were published online on July 31, 2007