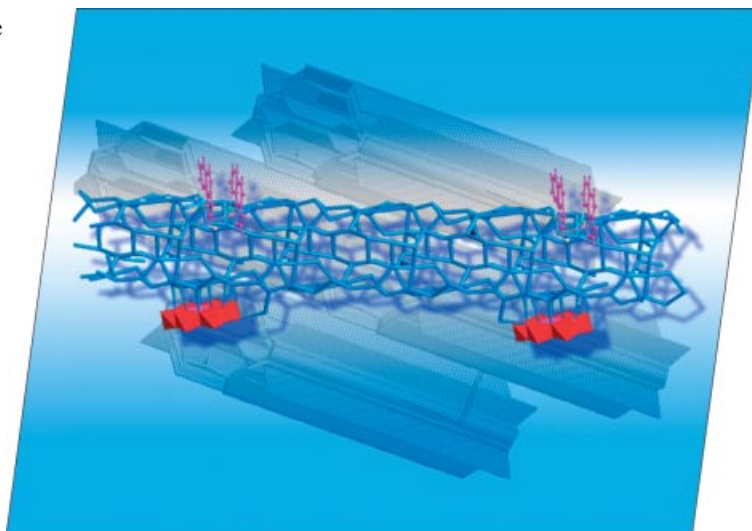




The EUChemSoc Societies have taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry*. Three further EUChemSoc Societies (Austria, Czech Republic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

COVER PICTURE

The cover picture shows a water pipe (wire-frame representation in blue), constructed solely from solvent water molecules that are present in the crystal lattice of an organic–inorganic hybrid compound $[\text{Cu}_2(\text{phen})_2(\text{CH}_3\text{COO})(\text{CH}_3\text{COOH})(\text{H}_2\text{O})_2][\text{Al}(\text{OH})_6\text{Mo}_6\text{O}_{18}]\cdot 28\text{H}_2\text{O}$. The supramolecular interactions of the water pipe with its surrounding (that includes a heteropolyanion, $[\text{Al}(\text{OH})_6\text{Mo}_6\text{O}_{18}]^{3-}$, shown as red polyhedra and a copper dimeric complex, shown as magenta ball-and-stick models) stabilise the compound so that it can be observed crystallographically. The background depicts the unit-cell packing of the water pipes in the relevant crystal. Details are described in the Short Communication by S. K. Das et al. on p. 231ff. The artwork was designed by Ms. Sabbani Supriya.



MICROREVIEW

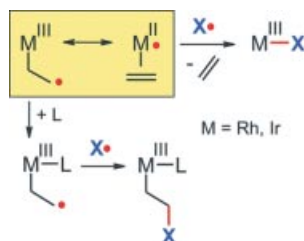
Radical Organometallic Chemistry

B. de Bruin,*

D. G. H. Hetterscheid 211–230

Paramagnetic (Alkene)Rh and (Alkene)Ir Complexes: Metal or Ligand Radicals?

Keywords: Rhodium / Iridium / Alkene ligands / Metallo-radicals / Ligand radicals



Paramagnetic alkene rhodium and iridium complexes reveal features of both metallo-radicals and ligand radicals. This dual-mode behavior is reflected by their high and diverse reactivity, as discussed in this review.

SHORT COMMUNICATIONS

Water Pipe in Inorganic Matrix

V. Shivaiah, T. Chatterjee, K. Srinivasu,
S. K. Das* 231–234



A Water Pipe Held Up by a Polyoxometalate Supported Transition Metal Complex: Synthesis and Characterization of $[Cu_2(phen)_2(CH_3COO)-(CH_3COOH)(H_2O)_2][Al(OH)_6Mo_6O_{18}]\cdot 28H_2O$

A water pipe, shown in wire-frame representation, is constructed by hydrogen-bonding interactions solely from solvent water molecules that are present in the crystal lattice of an inorganic–organic hybrid compound,

$[Cu_2(phen)_2(CH_3COO)(CH_3COOH)(H_2O)_2][Al(OH)_6Mo_6O_{18}]\cdot 28H_2O$. This is a unique example of a water tube, observed crystallographically in a polyoxometalate-based hybrid material.

Keywords: Heteropolyanion / Copper acetate dimer / Crystal structure / Lattice waters / Hydrogen bonds / Supramolecular chemistry

Linear Metal Clusters

K. Mashima,* Y. Shimoyama,
Y. Kusumi, A. Fukumoto, T. Yamagata,
M. Ohashi 235–238



Formation of a Dative Bond Between Pt^0 and Mo^{II} in Linear $Pt^0-Mo^{II}-Mo^{II}-Pt^0$ Complexes, $Mo^{II}_2Pt^0_2(pyphos)_4(PR_3)_2$, and Unique 1,4-Oxidative Addition Reaction of Diaryl Disulfides Giving $Mo^{II}_2Pt^I_2(pyphos)_4(SAr)_2$ (pyphos = 6-Diphenylphosphanyl-2-pyridonato)

The addition of diaryl disulfides to the $Pt^0 \cdots Mo^{II}$ datively bonded $Pt^0-Mo^{II}-Mo^{II}-Pt^0$ complex **4a** afforded dithiolate Pt^I complexes $Mo_2Pt_2(SAr)_2(pyphos)_4$ (**5**) by 1,4-oxidative addition.

Keywords: Linear clusters / Dative bonds / Oxidative addition / Thiolates / Platinum / Molybdenum

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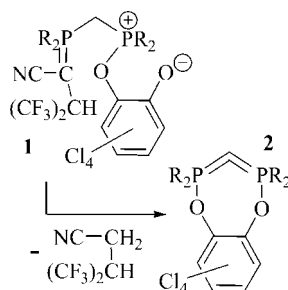
Decomposition of Zwitterions

I. Shevchenko,* V. Andrushko, E. Lork,
G.-V. Röschenthaler* 259–262



Oxidation of Phosphanes with Orthoquinones: An Unusual Decomposition of an Unexpectedly Stable Zwitterion

Keywords: Ylides / Phosphanes / Zwitterions / Carbodiphosphorane



Oxidation of the appropriate phosphane with tetrachloroorthobenzoquinone gives unexpectedly stable zwitterion **1** which undergoes an unusual decomposition into symmetrical carbodiphosphorane **2** and hexafluoroisovaleronitrile.

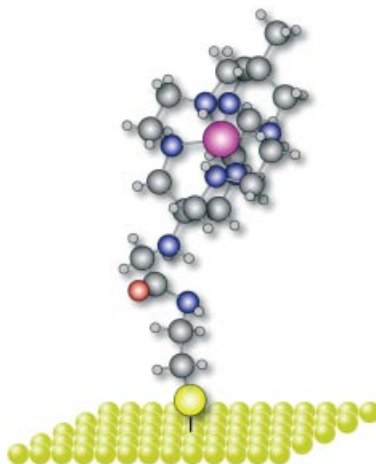
Sarcophagines

J. M. Harrowfield, G. A. Koutsantonis,*
H.-B. Kraatz, G. L. Nealon,
G. A. Orlowski, B. W. Skelton,
A. H. White 263–278



Cages on Surfaces: Thiol Functionalisation of Co^{III} Sarcophagine Complexes

Keywords: Sarcophagine / Amino acids / Disulfides / Cobalt / Self-assembled monolayers / Electrodeposition



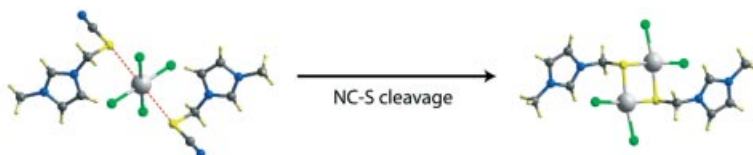
New cage cobalt complexes with oligopeptide tethers have been immobilised on Au surfaces via terminal mercaptoethylamide units. Their electrochemistry on the surface and of the untethered complexes in solution have been investigated.

Ionic Liquids

D. Zhao, Z. Fei, W. H. Ang, R. Scopelliti,
P. J. Dyson* 279–284

Thiocyanate Functionalised Ionic Liquids: Synthesis, Characterisation and Reactivity

Keywords: Ionic liquids / Thiocyanate / Palladium complexes / Imidazolium salts



A series of novel thiocyanate functionalised ionic liquids based on the 1-thiocyanomethyl-3-methylimidazolium cation was prepared.

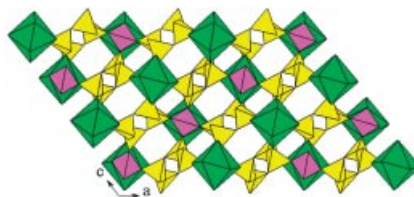
Their solid-state structures were investigated, including their reactivity with palladium(II) chloride under acidic conditions.

Lithium Rare Earth Polyphosphates

J. Zhu, W.-D. Cheng,* D.-S. Wu, H. Zhang,
Y.-J. Gong, H.-N. Tong,
D. Zhao 285–290

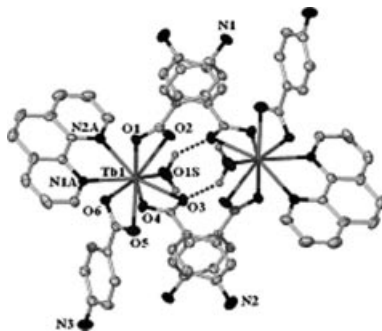
A Series of Lithium Rare Earth Polyphosphates [LiLn(PO₃)₄] (Ln = La, Eu, Gd) and Their Structural, Optical, and Electronic Properties

Keywords: Density functional calculations / UV/Vis spectroscopy / Rare earths / Phosphates



A series of lithium rare earth polyphosphates LiLn(PO₃)₄ (Ln = La, Eu, Gd) crystallizes in the monoclinic space group *C2/c* with *Z* = 4. Their unit-cell parameters decrease as the ionic radius of Ln³⁺ decreases (La³⁺ > Eu³⁺ > Gd³⁺). In the structure, both (PO₄)³⁻ zig-zag chains and infinite chains formed by the alternative connection of LnO₈ polyhedra and LiO₄ tetrahedra run parallel to the *b*-axis.

The synthesis and structural and spectroscopic characterisation of some lanthanoid *p*-aminobenzoates and their bipyridine, 1,10-phenanthroline or terpyridine adducts are presented. Incorporation of the lanthanoid *p*-aminobenzoates into polyurethane composites and the luminescence properties of these materials are also reported.



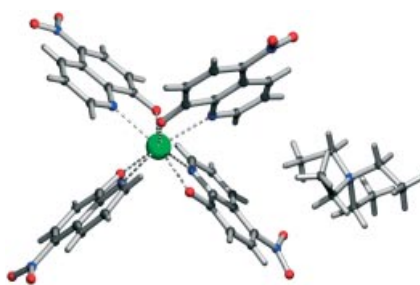
Luminescent Lanthanoid Materials

T. Fiedler, M. Hilder, P. C. Junk,*
 U. H. Kynast, M. M. Lezhnina,*
 M. Warzala 291–301

Synthesis, Structural and Spectroscopic Studies on the Lanthanoid *p*-Aminobenzoates and Derived Optically Functional Polyurethane Composites

Keywords: Luminescence / Lanthanoids / Polyurethane composites / Carboxylates

Water-soluble, stable and easily synthesizable 1:4 complexes of rare-earth ions with 8-hydroxy-5-nitroquinolate ligands have been prepared. These complexes can be sensitized by visible light with wavelengths up to 480 nm and show near-infrared emission in aqueous solution.



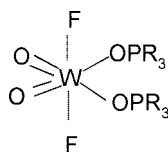
Near-Infrared Emitters

R. Van Deun,* P. Fias, P. Nockemann,
 K. Van Hecke, L. Van Meervelt,
 K. Binnemans 302–305

Rare-Earth Nitroquinolates: Visible-Light-Sensitizable Near-Infrared Emitters in Aqueous Solution

Keywords: Rare earth metals / Luminescence / Chelates / N,O ligands / Sensing

Phosphane oxide complexes of dioxidotungsten(VI), $[\text{WO}_2\text{X}_2(\text{OPR}_3)_2]$ ($\text{X} = \text{Cl}$ or Br), have been prepared under anhydrous conditions from WX_6 and $(\text{Me}_3\text{Si})_2\text{O}$ in CH_2Cl_2 , followed by addition of OPR_3 . The difluorido-dioxido complexes $[\text{MO}_2\text{F}_2(\text{OPR}_3)_2]$ ($\text{M} = \text{Mo}$ or W) have been prepared by fluorination of the corresponding chlorido complexes with Me_3SnF in CH_2Cl_2 .



Tungsten Chemistry

M. F. Davis, W. Levason,* R. Ratnani,*
 G. Reid,* T. Rose, M. Webster .. 306–313

Synthesis and Characterisation of W^{VI} Complexes of Phosphane Oxide Ligands, $[\text{WO}_2\text{X}_2(\text{OPR}_3)_2]$ ($\text{X} = \text{F}$, Cl or Br ; $\text{R} = \text{Me}$ or Ph), and of the $[\text{MoO}_2\text{F}_2(\text{OPR}_3)_2]$

Keywords: Tungsten / Molybdenum / Phosphane oxide / Crystal structures / Fluoride

DFT-supported experimental results suggest that the valence formulation of $[\text{Ru}(\text{trpy})(\text{Cl})(\text{L}^{1/2})]^+$ ($1^+/2^+$) can be best interpreted as spin-coupled $\text{Ru}^{\text{III}}-\text{L}_{\text{Sq}}$ with a minority contribution from the diamagnetic $\text{Ru}^{\text{II}}-\text{L}_{\text{Q}}$ state and the involvement of $d(\text{Ru})$ - and (L) -based frontier orbitals, respectively, in the successive oxidation processes and preferential involvement of Ru -based orbitals in the first reduction step.




Valence-State Distributions

S. Maji, S. Patra, S. Chakraborty,
 D. Janardanan, S. M. Mobin, R. B. Sunoj,*
 G. K. Lahiri* 314–323

Valence-State Distribution in the Ruthenium *o*-Quinonoid Systems $[\text{Ru}(\text{trpy})(\text{Cl})(\text{L}^1)]^+$ and $[\text{Ru}(\text{trpy})(\text{Cl})(\text{L}^2)]^+$ ($\text{L}^1 = o$ -Iminobenzoquinone, $\text{L}^2 = o$ -Diiminobenzoquinone; $\text{trpy} = 2,2':6',2''$ -Terpyridine)


Keywords: Ruthenium / Quinonoid ligands / Valence-state distributions / Density functional calculations / Spectroelectrochemistry

Chiral Discrimination

 Bonding Properties Related with Chiral Discrimination in Dinuclear Metal Complexes of Group 10

Keywords: Ab initio calculations / Coordination chemistry / Chiral discrimination / Bonding properties / *trans* influence


Acid–base and complexation properties of (aminoalkyl)bis(phosphonates) were studied by potentiometry. The crystal structures of the ligands, determined by X-ray diffraction analysis, show a different degree of protonation. Dimeric units of the Cu^{2+} complex of pamidronate in the solid state form a coordination polymer with a short metal–metal distance.

 Aminoalkylbis(phosphonates): Their Complexation Properties in Solution and in the Solid State

Keywords: Phosphonates / Complexation / Stability constants / Potentiometry

$$\text{H}_2\text{A} + \text{Cd} + \begin{cases} \text{H}_2\text{O} \rightarrow \text{—} \\ \text{phen} \rightarrow \text{—} \\ \text{bipy} \rightarrow \text{—} \end{cases}$$

Three novel functional cadmium(II) dicarboxylates were obtained by the skilful combination of carboxylate, the other coligands and cadmium nitrate. Their luminescent properties were also changed by the coordination modes.

 Three Novel Functional Cd^{II} Dicarboxylates with Nanometer Channels: Hydrothermal Synthesis, Crystal Structures, and Luminescence Properties

Keywords: Carboxylate / Supramolecular chemistry / Fluorescence / Coordination modes

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