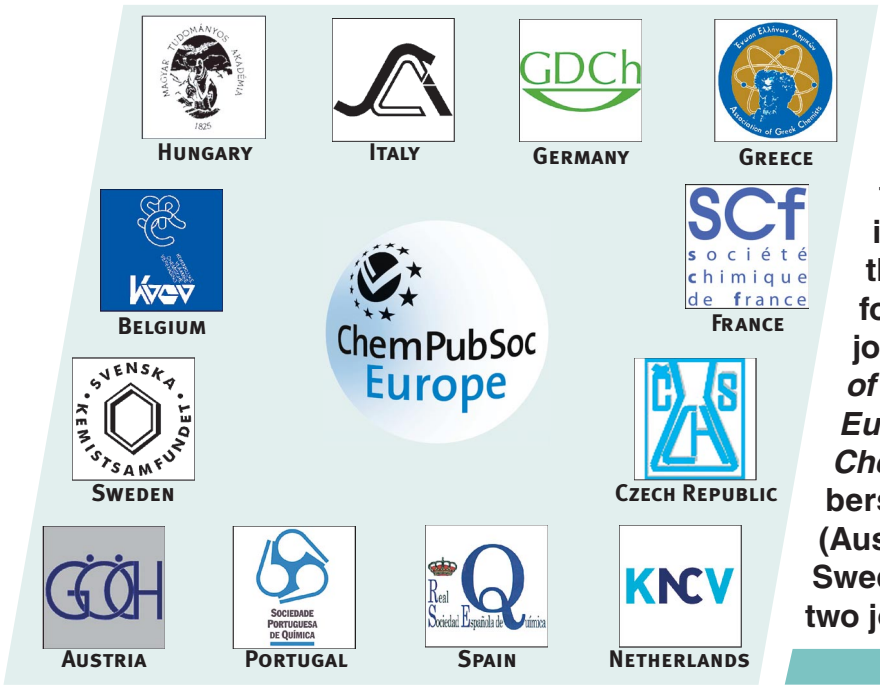
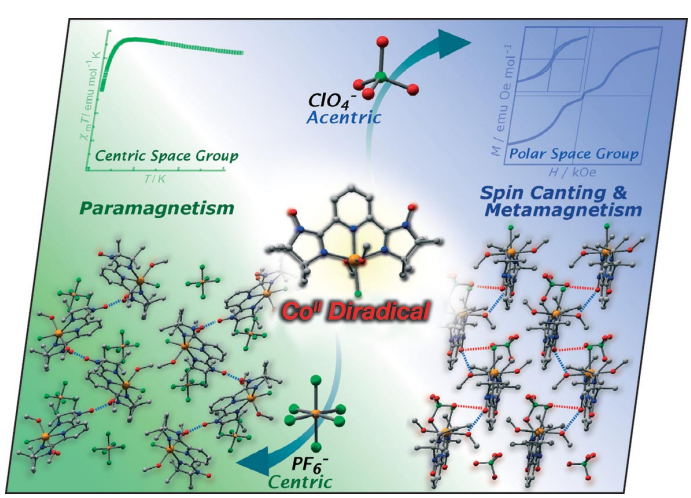


A union formed by chemical societies in Europe (ChemPubSoc Europe) has taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry*. Three further members of ChemPubSoc Europe (Austria, Czech Republic and Sweden) are Associates of the two journals.

COVER PICTURE

The cover picture shows that cobalt(II) diradical complexes with centric and acentric counter anions, $[CoCl(bisimpy)(MeOH)_2]X$ (X = PF_6 and ClO_4), crystallize in the centrosymmetric and polar space groups of $P2_1/c$ and $Pna2_1$, respectively. The PF_6^- salt is paramagnetic down to 1.8 K, whereas the ClO_4^- salt shows a weak ferromagnetic long-range order with metamagnetic behavior at 1.8 K. Spin canting can arise from single-ion magnetic anisotropy and/or antisymmetric exchange interaction (Dzyaloshinsky−Moriya interaction). The noncentrosymmetric space group of the latter complex is compatible with both mechanisms. Details are discussed in the Short Communication by H. Oshio et al. on p. 4851ff.



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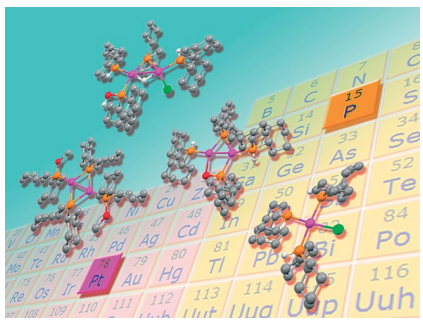
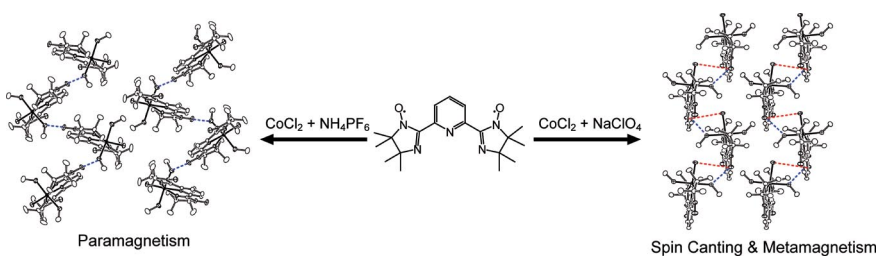
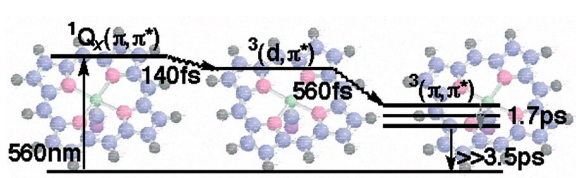
MICROREVIEW

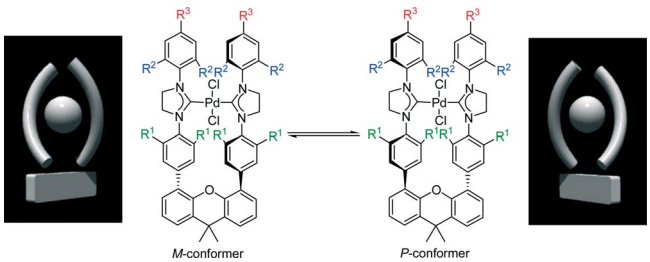


SHORT COMMUNICATIONS





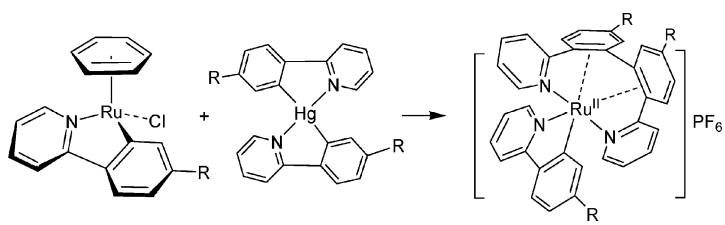
Crystal Engineering



Keywords: Carbene ligands / Palladium / Nitrogen heterocycles / Chiral resolution / X-ray diffraction

We synthesized a series of new bidentate bis(NHC)-Pd complexes with xanthene skeleton. The complexes crystallized in twisted conformations and therefore were chiral at solid state. Homochiral crystals were obtained when cyclic ether was used as the solvent. X-ray analyses indicated that the interaction between the complex and the solvent contributed to formation of the homochiral crystals.

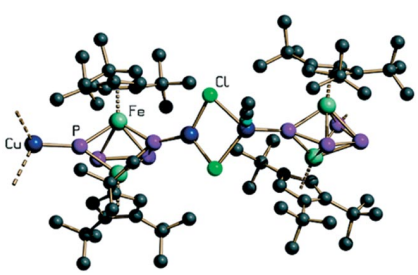
Intra-C–C Coupling at Ruthenium



Keywords: C–C coupling / N ligands / Metallacycles / Ring expansion / Ruthenium / Cyclometalation

The reaction between [Ru(η^6-C_6H_6)(phpy)-Cl] and Hg(phpy)$_2$ in methanol, where phpy = 2-(2-pyridinyl)phenyl, leads to the unexpected octahedral [Ru^{II}(phpy)(pbp)]-PF_6 complex {pbp = 2,2′-bis(2-pyridinyl)-1,1′-biphenyl}; pbp forms a nine-membered chelate providing η^6-tetradentate N/η^2-C=C/η^2-C=C/N coordination. The C=C units are weakly bound to the Ru^{II} center and are readily replaced by CO.

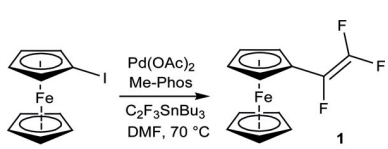
Phosphaferrocene Reactivity

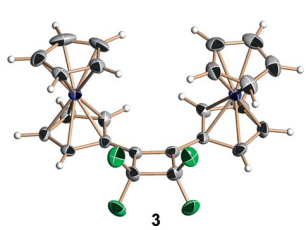


Keywords: Supramolecular chemistry / Copper / Fragmentation reactions / Triphosphaferrocenes / Tetraphosphabutadiene ligand

The coordination behaviour of 1,2,4-triphosphaferrocenes towards Cu^{I} chloride is decisively influenced by the substitution pattern of the Cp ring attached to iron. For the Cp-substituted derivative a dimeric complex is obtained. In the case of a tri-*t*Bu-substituted Cp‴ ligand complex, the triphosphole is fragmented and rearranges into a tetraphosphabutadiene moiety in an iron triple-decker sandwich complex embedded in a CuCl polymer matrix.

Trifluorovinylferrocene





Keywords: Trifluorovinyl group / Ferrocene / Stille coupling / Hexafluorocyclobutane / Cycloadditions

Excellent reactivity towards nucleophiles, [2+2] cycloaddition, defluoration and CF_2 group transformation: The first metallocene with a trifluorovinyl substituent is an extremely versatile reagent allowing an easy access to dinuclear ferrocenes like **3**.

CONTENTS

FULL PAPERS

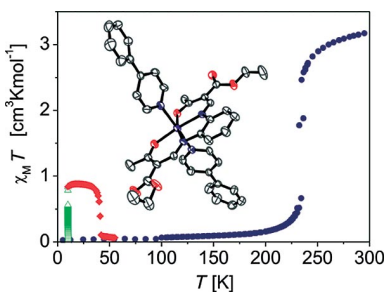
Metal−Metal Bonds

Keywords: Aluminum / Magnesium / Metal−metal σ bonding / Diradicals / Ab initio calculations / Stability analysis / Low-valent metal compounds

From recent results for compounds that contain metal−metal σ bonds (Mg−Mg, Zn−Zn, Al−Al) and are stable at room temperature, the question arises whether there are diradical intermediates resulting from ·MgR, ·AlR or ·ZnR. Calculations on this subject as well as on oligomeric $(AlR_2)_x$ and $(MgCl)_x$ species show that the synthesis of the metastable solid MgCl, for example, may be possible.

Spin-Crossover Complexes

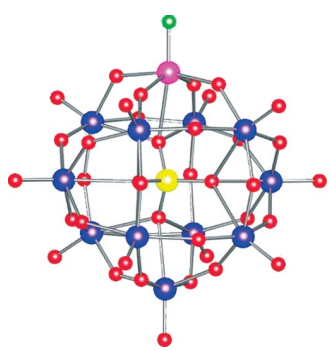
Keywords: Iron / N,O ligands / Magnetism



The magnetic and photomagnetic properties of two new spin-crossover complexes with N_4O_2 coordination are presented. From the data for six spin-crossover complexes, an initial explanation was given with regard to which parameters are responsible for the extent of intermolecular interactions in this type of complex.

(Nitrido)chromium Functionalized POM

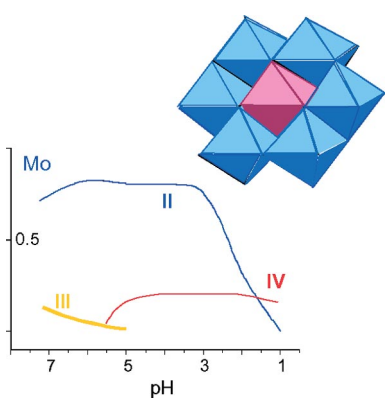
Keywords: Polyoxometalates / Nitrido compounds / Chromium



The synthesis of a (nitrido)chromium derivative of a Keggin-type POM is reported. Its characterization is illustrated by various spectroscopic methods and nucleophilic reactivity towards trifluoroacetic anhydride has been established.

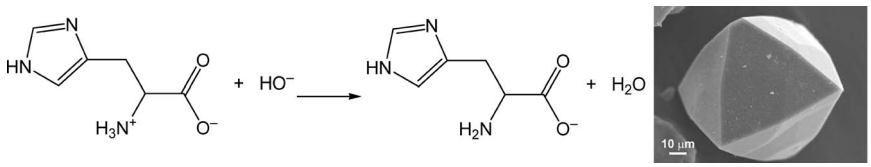
Polyoxometalate Complexes

Keywords: Molybdenum / Vanadium / Tellurium / Polyoxometalates / NMR spectroscopy



Three novel polyoxometalate anions, $V_9TeO_{28}^{5-}$ (**I**), $V_3Mo_3O_{24}^{9-}$ (**III**), and $V_5Mo_3TeO_{27}^{5-}$ (**IV**), have been observed, in addition to $TeMo_6O_{24}^{6-}$ (**II**), in aqueous Mo^{VI}-V^{V}-Te^{VI} solutions in the pH range 8−1, by using ^{51}V, ^{95}Mo, ^{17}O, and ^{125}Te NMR spectroscopy. Upon adding Nb oxalate, the Mo and V oxalates also form.

Zeolite Crystal Growth

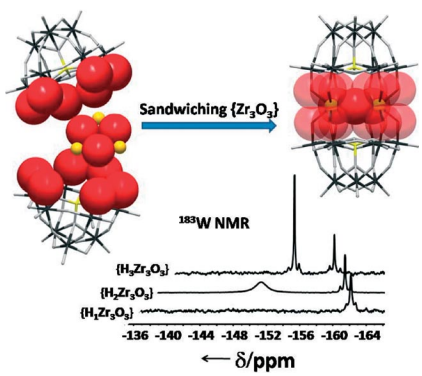


Dodecasil 3C was prepared in the presence of the amino acid DL-histidine as large, single crystals with sizes up to 140 μm.

Keywords: Crystal growth / Zeolites / Sol–gel / Amino acids

Polyoxometalate Chemistry

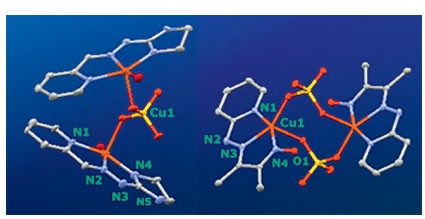
Reaction of $ZrOCl_2$ with A-α-$[SiW_9O_{34}]^{9-}$ leads to a "sandwich" complex which consists of a central triangular $\{Zr_3O_3\}$ core closely embedded between two $\{SiW_9O_{34}\}$ subunits. Structural characterisation shows that the central $\{Zr_3O_3\}$ core becomes protonated as a result of a remarkably slow proton transfer within the central triangle.



Keywords: Polyoxometalate / Zirconium / Tungsten / ^{183}W NMR spectroscopy

Cu-Based Frameworks

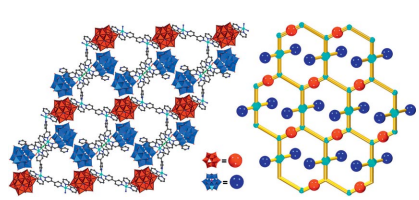
The synthesis and characterisation (X-ray, FTIR, UV/Vis, emission spectroscopy, electrochemistry) of sulfate-bridged dimeric copper(II) complexes with a 3D network using *N*-heterocyclic ligands are reported. Electrochemistry shows metal-centred oxidation in both cases. DFT and TDDFT calculations provide useful information on the electronic structures and spectroscopic transitions of the complexes.



Keywords: Dimeric copper(II) / Electrochemistry / Density functional calculations

Polyoxometalate-Based Hybrids

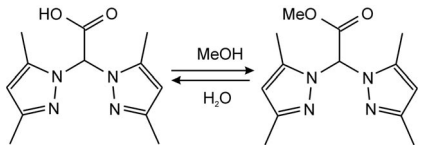
Two unusual polyoxometalate hybrids with copper ions and mixed ligands have been hydrothermally prepared. In one case, dangling polyanion clusters are arranged in a mutual *anti* orientation about the 2D keleton (see the picture).



Keywords: Polyoxometalates / Hydrothermal synthesis / Organic-inorganic hybrids / Mixed ligands

CONTENTS

Two complexes, $[CuCl_2(Mebdmpza)]$ and $[Cu_2(\mu\text{-}O_4C_2)Cl_2(Mebdmpza)_2]$, were synthesized by reaction of $CuCl_2$ with the precursor ligand bis(3,5-dimethylpyrazol-1-yl)-acetic acid (Hbdmpza) in methanol. The transformation of the ligand Hbdmpza is reversible. $[CuCl_2(Mebdmpza)]$ in water yields $[Cu(bdmpza)_2]\cdot 2H_2O$ and/or water-free $[Cu(bdmpza)_2]$.



Keywords: Copper / Pyrazole ligands / Magnetic properties / Ligand design / Antiferromagnetism

* Author to whom correspondence should be addressed.

Supporting information on the WWW (see article for access details).

If not otherwise indicated in the article, papers in issue 30 were published online on October 10, 2008

