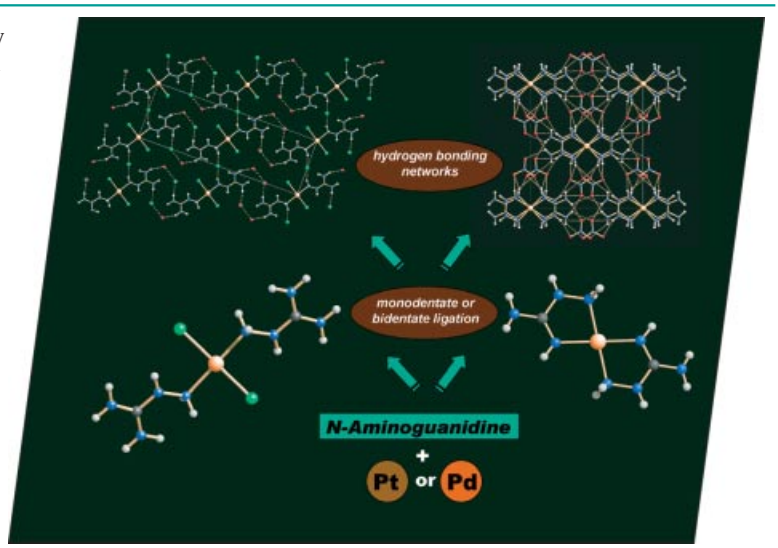
The EUChemSoc Societies have taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry.* Three further EUChemSoc Societies (Austria, Czech Republic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

COVER PICTURE

The cover picture shows how aminoguanidine may behave as either a monodentate or bidentate ligand in square-planar complexes of platinum or palladium. In each case, the coordinating ligands can participate in extensive hydrogen-bonding networks. Details are discussed in the article by D. J. Aitken, J. Kozelka et al. on p. 3327ff.

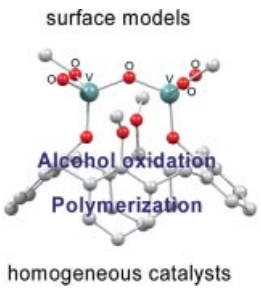


CONTENTS

MICROREVIEW

Oxovanadium Calixarenes

Keywords: Vanadium / Oxo complexes / Models / Calixarenes / Catalysis

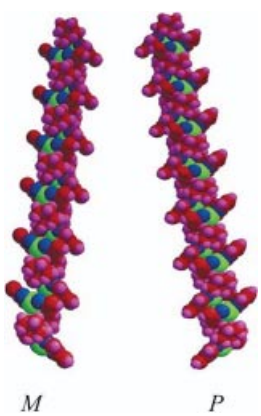


Oxovanadium calixarene complexes can be regarded as models for active surface species on vanadium oxide based heterogeneous catalysts, and their investigation thus contributes to a more comprehensive understanding of the effective mechanisms. In addition, they are interesting as homogeneous catalysts, for instance for aerobic alcohol oxidation and olefin polymerization.

SHORT COMMUNICATIONS

Supramolecular Helical Assemblies

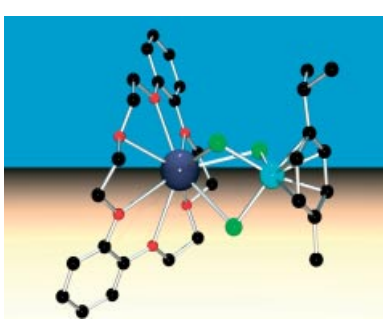
Keywords: Nickel(II) complexes / C–H···Ni^{II} interactions / Helical structures



Reaction of (*R,R*)- and (*S,S*)-bis(pyrrol-2-ylmethyleneamino)cyclohexane with $Ni^{II}(OAc)_2 \cdot 4H_2O$ afforded enantiomeric nickel(II) Schiff-base complexes. Rare C–H···Ni^{II} interactions were found to be responsible for the facile formation of the homochiral *M* and *P* helices of the neutral, chiral, mononuclear complexes in crystal lattices.

Heterodimetallic Dinuclear Complexes

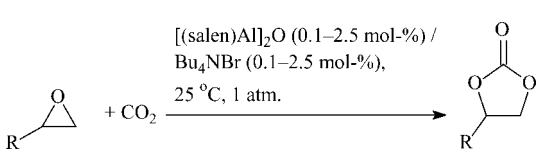
Keywords: Heterometallic complexes / Bridging ligands / Ruthenium / Crown compounds / X-ray crystallography



The first example of a triple-chlorido-bridged heterodimetallic dinuclear complex comprising an (η^6-arene)Ru^{II} fragment and a Group 1 metal crown ether fragment is presented. The solid-state structure was determined by X-ray crystallography. NMR investigations indicate the presence of a dynamic equilibrium in solution.

Carbon Dioxide Fixation

Keywords: Carbon dioxide fixation / Aluminium / Schiff bases / Epoxides / Catalysis

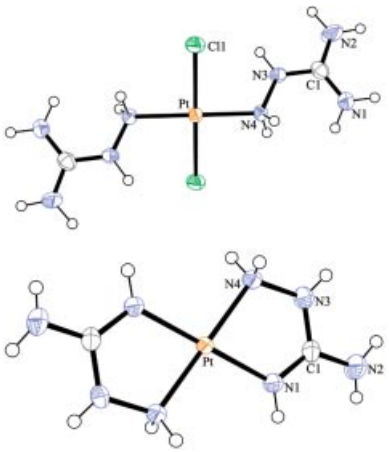


Dimetallic aluminium(salen) complexes show exceptionally high catalytic activity for the synthesis of cyclic carbonates from terminal epoxides at ambient temperature and pressure. The process has the potential to contribute towards decreasing atmospheric carbon dioxide emissions from the burning of fossil fuels.

FULL PAPERS

Aminoguanidine Coordination Modes

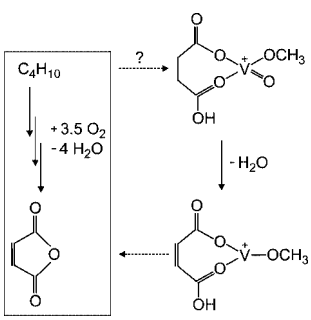
Aminoguanidine forms monodentate and bidentate complexes with Pt^{II} and Pd^{II}. A series of N4-bound monodentate and N1,N4-bound chelate complexes was synthesized and characterized by solution NMR and by X-ray crystallography. In the solid state, hydrogen-bonding networks were observed; all four nitrogens of the Amgu ligand are able to behave as hydrogen atom donors.



Keywords: Platinum / Palladium / N ligands / Coordination modes

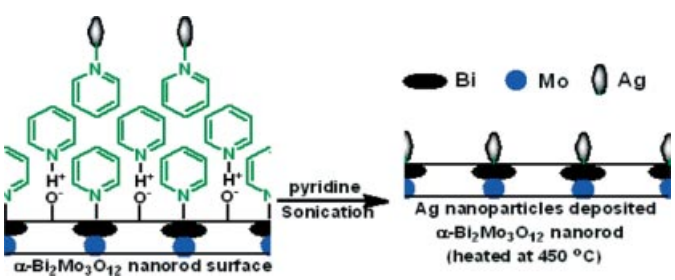
Gas-Phase Fragmentation

Electrospray ionization is used for the investigation vanadium(V) complexes of maleic and succinic acid. The fragmentation patterns of the mass-selected ions inter alia reveal a hitherto unrecognized connection between succinato and maleato complexes, which may be relevant in the context of vanadium-oxide-mediated formation of maleic acid upon partial oxidation of C_4-hydrocarbons.



Keywords: Carboxylato complexes / Vanadium / Electrospray ionization / Maleic anhydride / Mass spectrometry

Hybrid Nanocomposites

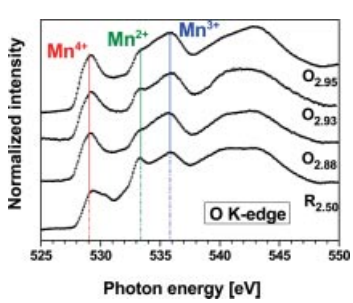


Silver nanoparticles with an average size of about 10 nm were uniformly deposited on the surface of α-$Bi_2Mo_3O_{12}$ nanorods by using power ultrasound. Pyridine as a medium assisted the deposition process of the Ag nanoparticles, whereas Bi was observed to be the preferred binding site on the surface of the nanorods.

Keywords: Nanoparticles / Ultrasound / Deposition / Nanorods / Surface analysis / Electron microscopy

Magnetic Perovskites

Oxygen-deficient manganites, with the same composition but different oxidation states of Mn, were stabilized through a reversible topotactic process using different pathways. Dramatic changes in the magnetic behaviour were observed due to the stabilization of different Mn oxidation states.

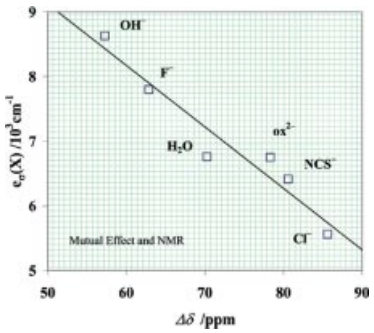


Keywords: Mixed-valent compounds / Perovskite phases / Magnetic properties / X-ray absorption near-edge spectroscopy (XANES) / Topotactic reaction

CONTENTS

Ligand Effects

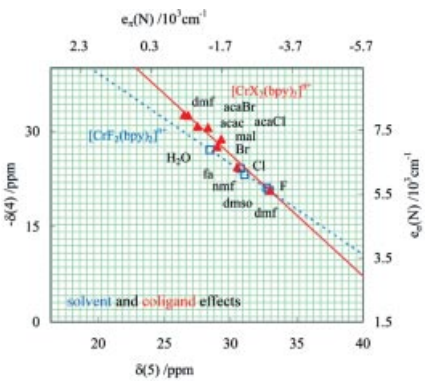
The effect of the co-ligand (X) on the ^2H NMR chemical shift difference ($\Delta\delta$) for *trans*-$[CrX_2([D_4]3,2,3\text{-tet})]^{n+}$ and *cis*-α-$[CrX_2([D_4]trien)]^{n+}$ is found to correlate well with the reported $e_\sigma(X)$ values of these co-ligands, thereby demonstrating the first example of the co-ligand effect or a mutual influence of ligands associated with variation of the Cr−N and Cr−X bonds in *cis*- and *trans*-$[CrX_2N_4]$-type complexes.



Keywords: Chromium complexes / Ligand effects / N ligands / NMR spectroscopy / Angular overlap model parameters

Ligand Effects

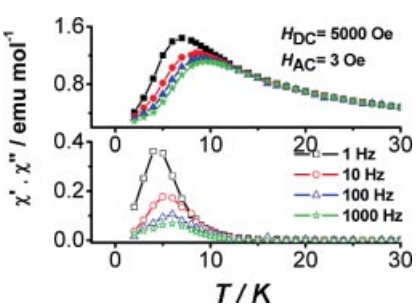
The dependence of the ^2H NMR shifts of *cis*-$[CrX_2([D_4]bpy)_2]^{n+}$ and *fac*-$[CrX_3([D_{12}]tpa)]^{n+}$ on the co-ligands X allows the ordering of the AOM parameter for monodentate and/or didentate ligands, from which the ranking of the two-dimensional spectrochemical series for Cl^- and Br^- is found to differ from that in the aliphatic amine complexes. This change is explained in terms of the hard/soft acid/base (HSAB) concept.



Keywords: Chromium complexes / Ligand effects / N ligands / NMR spectroscopy / Angular overlap model parameters

Molecular Magnetism

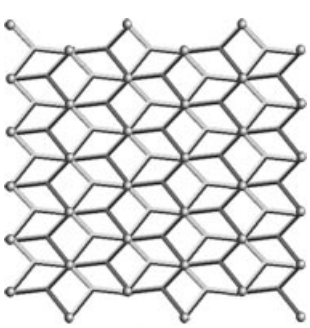
A new lanthanide citrate $[Dy(citrate)(H_2O)]_n$ (**1**) was hydrothermally synthesized and structurally characterized. The structure of **1** exhibits a 2D layer structure. The photoluminescence spectrum shows blue luminescence in the solid state at room temperature. Owing to the special frustration structure, unusual magnetic relaxation was found in compound **1**.



Keywords: Lanthanides / Coordination chemistry / Magnetic properties / Hydrothermal synthesis

Lanthanide−Organic Frameworks

Three novel LnOFs $[Ln(pza)(OH)(H_2O)]_n$ (Ln = Y, Er and Yb) with helical chains and 2D $(4^3)_2(4^6,6^6,8^3)$ topology were obtained by hydrothermal synthesis. The upconversion properties resulting from two-photon excitation of Y: Er, Yb codoped coordination polymer and the magnetic properties of the Er and Yb complexes are investigated.



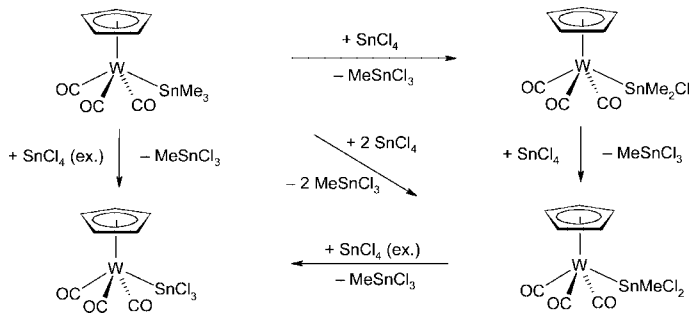
Keywords: Lanthanide−organic frameworks / Codoped coordination polymers / Upconversion properties / Magnetic properties

CONTENTS

Organotin Complexes

Synthesis of Half-Sandwich Tungsten Chlorogermyl and Chlorostannyl Complexes

Keywords: Half-sandwich complexes / Tungsten complexes / Germanes / Stannanes / Stannylcyclopentadienes



A chlorination system is established, which enables a controlled and successive chlorination of a trimethylstannyl tungsten complex to the trichlorostannyl derivative via the isolable mono- and double-chlorinated compounds by use of $SnCl_4$. In addition, we proved that alkali salt elimination has to be regarded as a straightforward route to synthesize a range of diorgano chlorogermyl and chlorostannyl tungsten complexes of the general formula $[(\eta^5\text{-}C_5R'_5)L(OC)_2W(ER_2Cl)]$ (R′ = H, Me; L = CO, PPh_3; E = Ge, Sn; R = Me, Bu).

Nitrosyl Complexes

Synthesis and Spectro-electrochemical Aspects of $[Ru^{II}(trpy)(pdt)(X)]^{n+}$ (trpy = 2,2′:6′,2″-Terpyridine, pdt = 5,6-Diphenyl-3-pyridyl-*as*-triazine, X = Cl^-, CH_3CN, NO_2^-, NO^+, $NO^{\cdot}$) – Electrophilicity of $\{Ru^{II}\text{–}NO^+\}$ and Photolability of $\{Ru^{II}\text{–}NO^{\cdot}\}$

Keywords: Ruthenium / Nitrosyl complex / Spectroscopy / Electrochemistry / Reactivity

Moderately electrophilic nitrosyl (νNO^+ = 1944 cm^{-1}) in $\mathbf{4}^{3+}$ transforms to the corresponding nitro species in CH_3CN under alkaline conditions with a pseudo-first-order rate constant (k/s) of 4.13×10^{-4} at 298 K and on exposure of light $\mathbf{4}^{2+}$ undergoes slow photocleavage of the $Ru^{II}\text{–}NO\cdot$ bond in CH_3CN with a k_{NO} of 4.4×10^{-3} min^{-1} ($t_{1/2} \approx 157$ min).

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