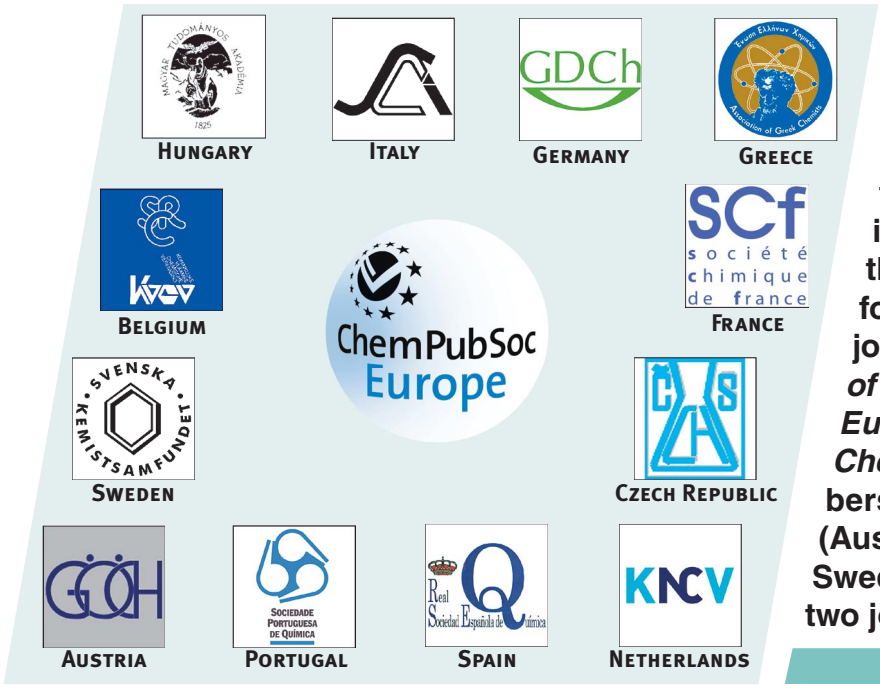
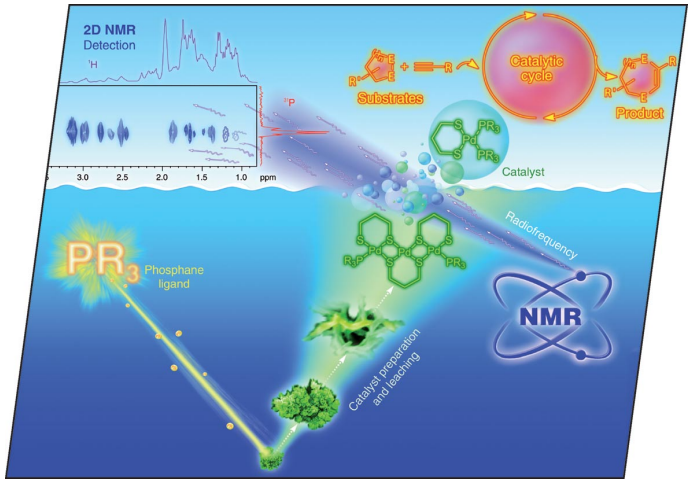


A union formed by chemical societies in Europe (ChemPubSoc Europe) has taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry*. Three further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

COVER PICTURE

The cover picture shows the impact of the phosphane ligand on solid metal nanoparticles, which initiates transformation of the metal species into a high-performance catalyst. The evolution of the transition-metal complexes was monitored by NMR spectroscopy, and the active form of the catalyst was detected in the 2D HMQC spectrum. A novel synthetic procedure to access cyclic vinyl chalcogenides was developed by utilizing an in situ designed catalyst in an E−E bond addition reaction to acetylenes (E = S, Se). Details are discussed in the article by V. P. Ananikov, I. P. Beletskaya et al. on p. 1149ff.



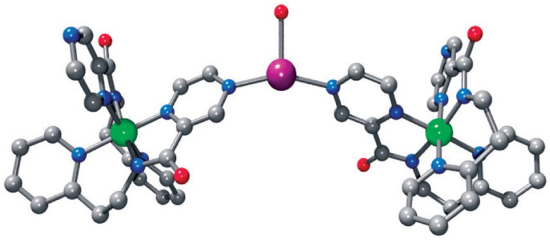
CONTENTS

MICROREVIEW

SHORT COMMUNICATION

FULL PAPERS

Linking Pyrazine-Based Complexes

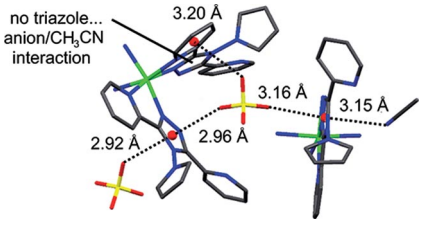


A two-step complexation procedure using cobalt(III) to prepare building blocks, then silver(I) to connect them through the "spare" nitrogen atoms "out the back" of the building block complexes, was successful generating $\{[Co^{III}(\mathbf{L}^{1E})_2]_2$-$[Ag^{I}(H_2O)]\}(BF_4)(NO_3)_2$ (structure shown).

Keywords: Pyrazine / Cobalt / Silver / Mixed-metal complexes / Electrochemistry / Amides

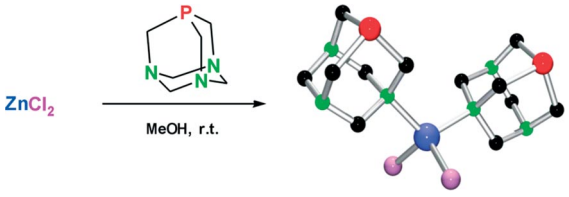
New Class of Anion–π Interactions?

Four mononuclear nickel(II) complexes contain a surprising and strong anion–π-anion "sandwiching" arrangement that seems to contradict the current simple electrostatic description of anion–π interactions.



Keywords: Coordination compounds / Pi interactions / Supramolecular chemistry / Triazoles / N ligands

Zn–PTA Complexes

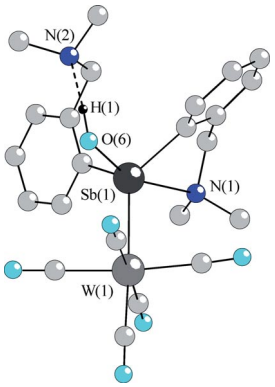


The Zn^{II} compounds $[ZnCl_2(PTA)_2]$ (PTA = 1,3,5-triaza-7-phosphaadamantane) and $[PTA–Me]_2[ZnI_2X_2]$ (X = Cl, X = I; PTA–Me = *N*-methyl-1,3,5-triaza-7-phosphaadamantane) have been prepared by treating $ZnCl_2$ with PTA and [PTA–Me]I, respectively, in methanol at room temperature. $[ZnCl_2(PTA)_2]$ represents the first example of a Zn complex bearing PTA or any derived ligand with a cage-like PTA core.

Keywords: Zinc / N,P ligands / 1,3,5-Triaza-7-phosphaadamantane / Coordination modes

Hypervalent Organoantimony(III)

The solid-state structure of $[\{2\text{-}(Me_2NCH_2)C_6H_4\}_2Sb]_2E$ [E = O, S] revealed square-pyramidal $(C,N)_2SbE$ cores, whereas the NMR spectroscopic data are consistent with configuration stability of the Sb atom. By contrast, in $[\{2\text{-}(Me_2NCH_2)C_6H_4\}_2SbOH][W(CO)_5]$ the Sb center has a trigonal-bipyramidal environment, and one of the N atoms is involved in intramolecular hydrogen bonding.

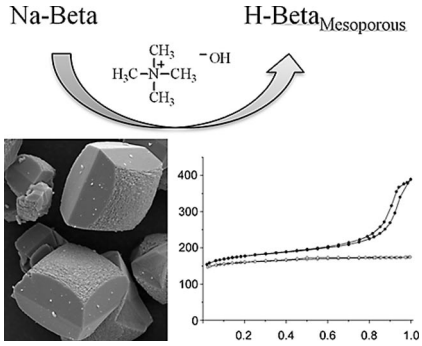


Keywords: Antimony / Hypervalent compounds / Chalcogens / Structure elucidation

CONTENTS

Desilication

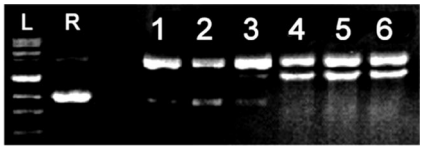
Keywords: Zeolites / Mesoporous materials / Desilication / Ion exchange



Zeolite beta was successfully desilicated using tetramethylammonium hydroxide. It is shown that calcination of the desilicated material directly produces the mesoporous acidic form of the zeolite. A protocol integrating the post-synthesis treatments desilication and ion-exchange is thus presented.

Phosphoester Hydrolysis

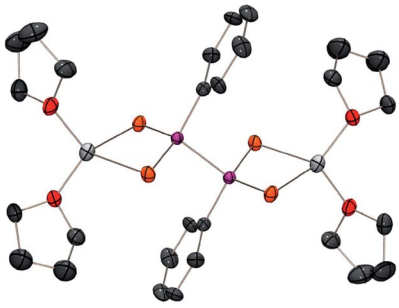
Keywords: Heterogeneous catalysis / Hydrolysis / Iron / Metallopolymers / Phosphorus / DNA cleavage



Fe^{3+} complexes of pyridine-containing copolymers show effective oxidative double-stranded DNA cleavage and selective and efficient catalysis toward phosphodiester hydrolysis at pH 6–8. One complex exhibited significant first-order catalytic proficiency toward the hydrolysis of bis(*p*-nitrophenyl) phosphate at pH 5.3 and at 25 °C, representing a functional model of an acid phosphoesterase.

Selenophosphonates

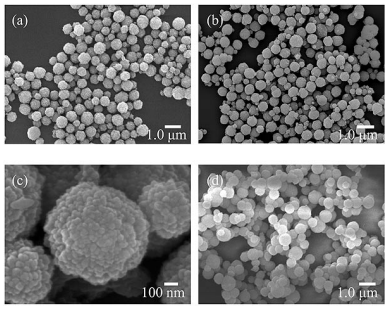
Keywords: Phosphorus / Selenium / Se ligands / Structure elucidation / NMR spectroscopy



A general and straightforward synthesis of alkali metal tetraselenohypodiphosphonates $(RP)_2Se_4M_2$ (R = alkyl, aryl; M = Li, Na) is presented. Their ^{31}P and ^{77}Se NMR spectra are discussed. The crystal structures of two of the salts reveal different coordination modes of the $(RP)_2Se_4^{2-}$ anion to the alkali metal cations.

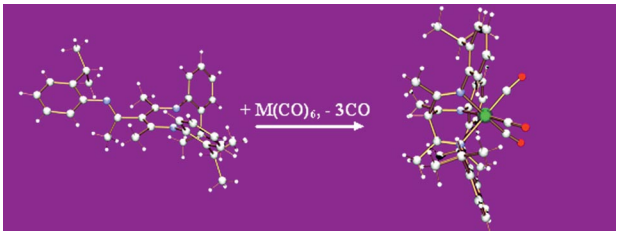
Hierarchical Anatase Microspheres

Keywords: Photochemistry / Nanostructures / Self-assembly / Titanium



Crystalline anatase microspheres of hierarchical structures are obtained directly by homogeneous precipitation under mild conditions (83–100 °C, 30 min) using ammonium fluorotitanate as the titanium source and urea as the precipitant.

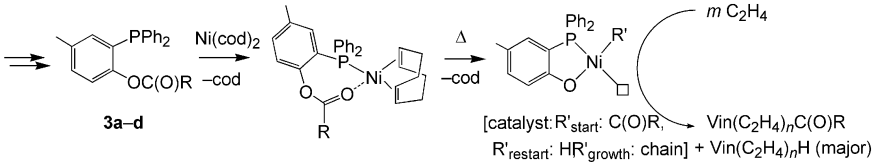
Scorpionates



Keywords: Tridentate ligands / N ligands / Ligand design / Chromium / Microporous materials

A real scorpionate: Scorpions normally do not sting with their tail until they have their prey firmly in their grasp. The new family of facially capping ligands reported, the β-triketimines, fits the arachnomorphic analogy better than previous "scorpionate" ligands, in that most examples exist in a pro-bidentate form, which converts to an *N*,*N*′,*N*″-κ$_3$-tridentate ligand only when presented with Cr-goup metal "prey". Once in this complexed form, C_3-symmetric examples self-organise to form a microporous network.

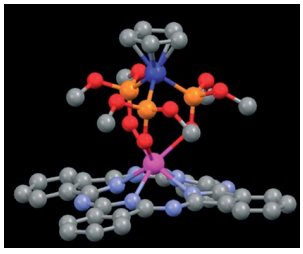
P,O Nickel Catalysts



Keywords: Phosphanes / Nickel / Polymerization / P ligands

Coupling of lithium 2-lithiocresolate with $ClPPh_2$ and subsequently with $ClSiMe_3$/MeOH, $ClP(O)Ph_2$, or RC(O)Cl (R = Me, *t*Bu, Ph, 4-$MeOC_6H_4$) provided 2-phosphanylcresol **1**, its phosphinic acid ester **2**, and carboxylic esters **3a**–**d**, in part structurally characterized by X-ray diffraction. In contrast to ethers of **1**, the esters give highly active nickel catalysts for polymerization of ethylene.

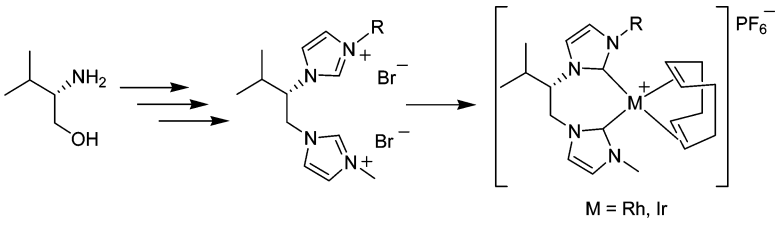
Monophthalocyaninato Complexes



Keywords: Lanthanides / Phthalocyanines / Tripodal ligands / Near-infrared emission

A series of heterobimetallic (monophthalocyaninato)lanthanide complexes of Yb and Er supported by a tripodal cobalt-based ligand have been synthesized and structurally characterized. Photophysical studies show that these complexes show distinct near-infrared emissions, with the singlet oxygen phosphorescence responsible for the Yb^{3+} case and the lanthanide ion emission for the Er^{3+} congener.

Chiral NHC Complexes



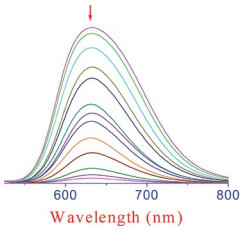
Keywords: Nitrogen heterocycles / Carbene ligands / Iridium / Rhodium

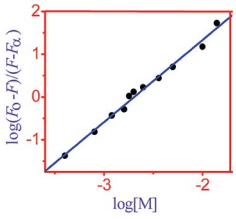
Chiral bis(N-heterocyclic carbene) complexes of rhodium(I) and iridium(I) are prepared by a six-step synthesis starting from L-valinol. This route makes it possible to modify the ligand at several positions. The *exo* and *endo* complex isomers are characterised by ^1H NMR spectroscopy and single-crystal X-ray diffraction.

CONTENTS

Fluoroionophores for Cations

Keywords: Receptors / Ruthenium / Rhenium / Crown compounds / Electrochemistry

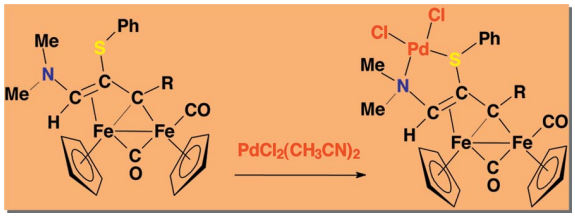




Molecular receptors containing a Ru^{II}/Re^{I} bpy/phen moiety as fluorophore and a crown ether as ionophore have been synthesised and their luminescence, electrochemical and cation-binding properties with a large number of metal ions investigated. Luminescence and ^{1}H NMR spectroscopic studies suggest a strong complexation of the ionophores with certain metal ions.

Organometallic Linkers

Keywords: Bridging ligands / Chelates / Zwitterions / N,S ligands / Iron



Diiron complexes bearing bridging functionalized C_3 organic frameworks can be transformed into chelating N,S ligands. Several modifications and functionalizations of the bridging C_3 framework are possible, thus making these "organometallic ligands" very versatile.

* 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 8 were published online on February 23, 2009

