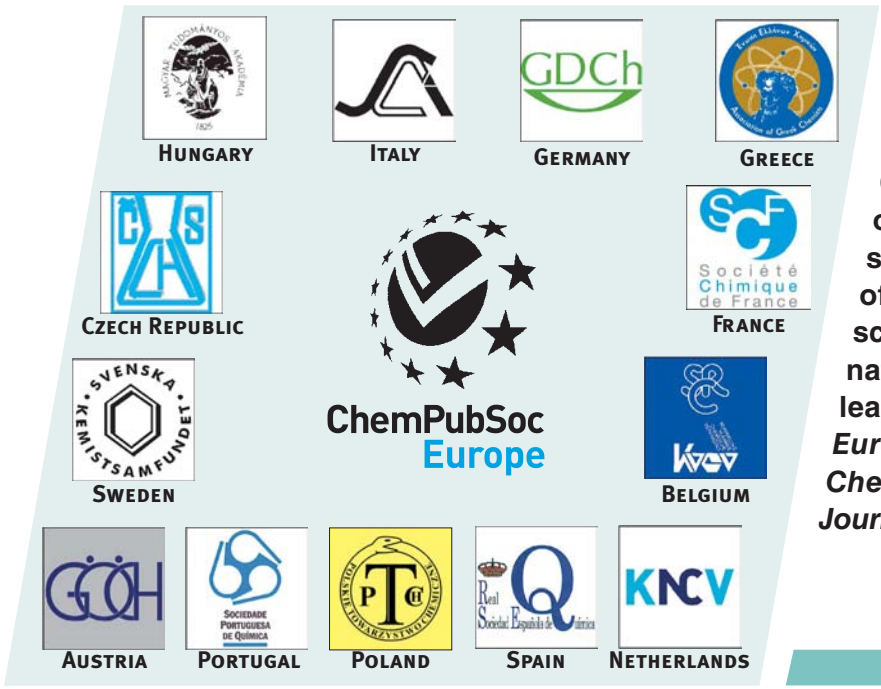
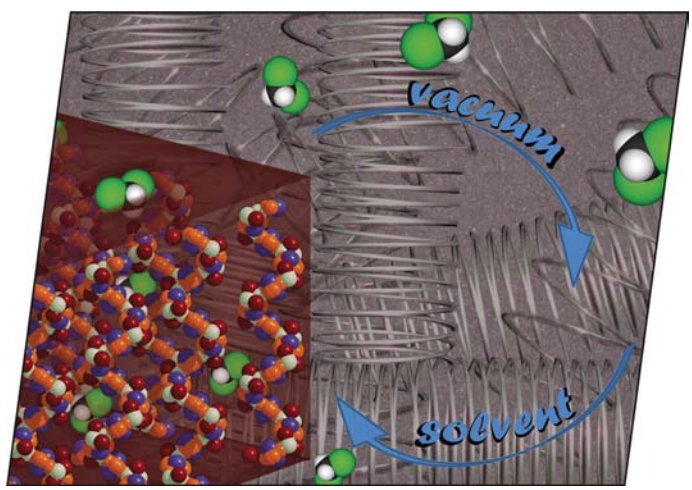


EurJIC is a journal of ChemPubSoc Europe, a union of 16 European chemical societies formed for the purpose of publishing high- quality science. All owners merged their national journals to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry*.

Other ChemPubSoc Europe journals are *Chemistry – A European Journal*, *ChemBioChem*, *ChemPhysChem*, *ChemMedChem*, *ChemSusChem* and *ChemCatChem.*

COVER PICTURE

The cover picture shows the porous metal-organic polymer $[(Cp^{*}_{2}Mo_2P_4S)_3(CuI)_4]_n$, which is composed of helical substructures with opposite handedness. The compound incorporates CH_2Cl_2 molecules when it is stored under the solvent. This process is reversible under high vacuum without loss of crystallinity of the material and resembles, therefore, the reversible stretching of an elastic spring. Details of the synthesis and characterization of this and related compounds are given in the article by J. Wachter et al. on p. 785ff.



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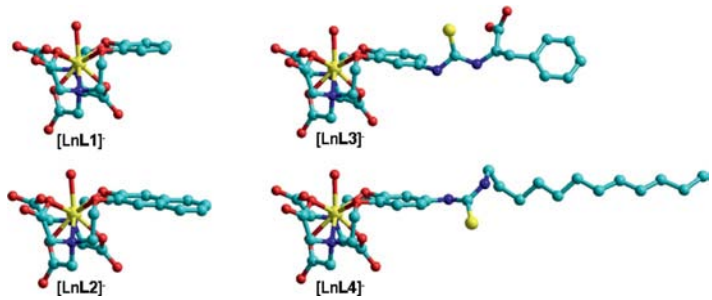
MICROREVIEW

FULL PAPERS

Rigidified Gadolinium Chelates

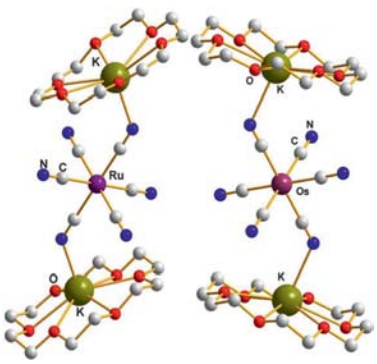


Keywords: Lanthanides / NMR spectroscopy / Imaging agents / Relaxometry

The solution properties of lanthanide(III) complexes of rigidified EGTA derivatives were investigated in aqueous media by ^{1}H and ^{13}C NMR spectroscopy and by ^{1}H and ^{17}O NMR relaxometric techniques. Their binding affinity to human serum albumin was evaluated both experimentally and by docking simulations.

Hexacyanides of Ru and Os

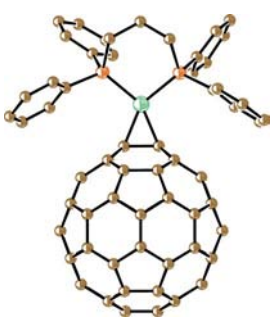
Oxidation of $K_4M^{II}(CN)_6$ (M = Ru, Os) is easily performed by air or H_2O_2 in methanol, in the presence of 18-crown-6. The corresponding paramagnetic derivatives of Ru^{III} and Os^{III} are obtained in high yield and high purity.



Keywords: Ruthenium / Osmium / Hexacyanometallates / Oxidation / 18-crown-6

Nickel–Fullerene Complexes

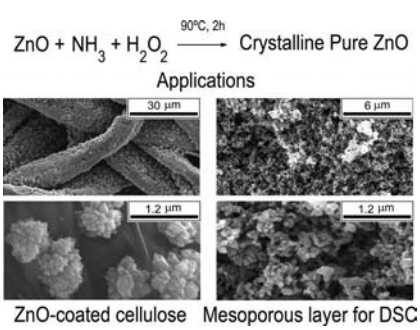
The η^2 complex of nickel bis(diphenylphosphanyl)propane with fullerene, Ni(dppp)-(η^2-C_{60})·$(C_6H_{14})_{0.84}$·$(C_6H_4Cl_2)_{0.16}$, was obtained by the reduction method. The crystal structure of the nickel–C_{60} η^2 complex was determined for the first time to show short Ni–C(C_{60}) bonds. Coordination results in a lowering of the C_{60} symmetry and noticeable π back-donation to the C_{60} molecule.



Keywords: Fullerenes / Nickel / Crystal growth / Solid-state structures / IR spectroscopy / UV/Vis spectroscopy / Layered compounds

Clean ZnO Deposition

A novel ZnO precursor solution that neatly decomposes after evaporation and moderate thermal treatment is presented. The method is based on the enhanced solubility of commercial ZnO in aqueous ammonia in presence of H_2O_2. This precursor solution is useful for the low-temperature preparation of ZnO-coated cellulose and ZnO porous photoanodes for dye-sensitized solar cells.



Keywords: Nanostructures / Semiconductors / Energy conversion / Zinc oxide / Low-temperature deposition

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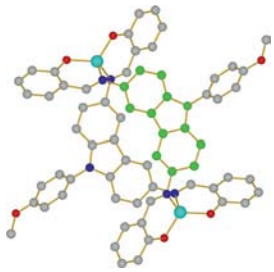
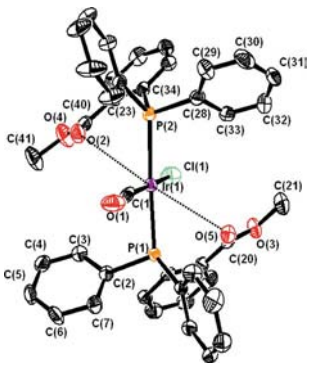
Carbazole Cu and Zn Complexes



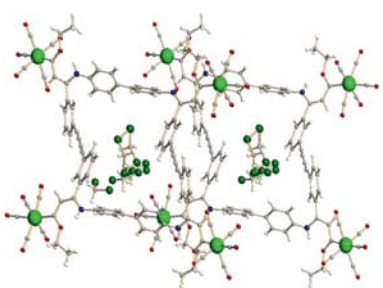
Combining photoactive bridging ligands with magnetic metal ions: Reaction of a fluorescent aryl-substituted carbazole ligand with copper(II) and zinc(II) ions results in the formation of metallacycles of the general formula $[M_2L_2]$. The fluorescent bridging ligand mediates antiferromagnetic exchange coupling between the copper centers.

Vaska-Type Complexes



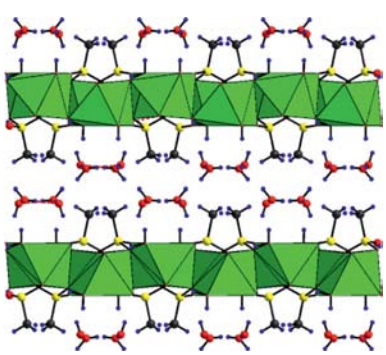
Two Vaska-type complexes *trans*-$[Ir(CO)Cl(2\text{-}Ph_2PC_6H_4\ COOMe)_2]$ (**1a**) and *trans*-$[Ir(CO)Cl(2\text{-}Ph_2PC_6H_4OMe)_2]$ (**1b**) are newly synthesised. Complex **1a** exhibits Ir···O "secondary" interaction to generate a pseudo-hexacoordinated complex. Complex **1b** shows three times more activity in oxygen uptake than Vaska's complex, while **1a** remains unreactive.

Assembly of Metallacyclophanes



A new type of homo- and heterocyclophane metallomacrocycles with different size cavities was prepared by combining Fischer biscarbene complexes and different aromatic diamines as linkers. The structure analysis of one of these tetranuclear complexes is reported for the first time and reveals an interesting nanochannel architecture assembly.

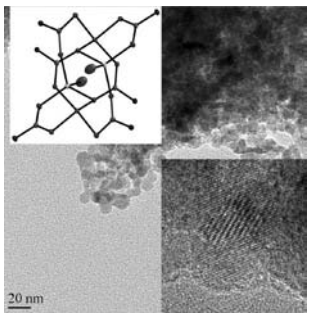
Layered Metal Phosphonates



Strontium methylphosphonate is a new layered compound that is a suitable host material for the intercalation of oxygen- and nitrogen-containing organic guests.

Single-Source Precursors

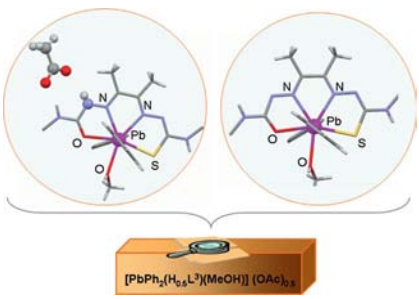
A new method for the preparation of heterobimetallic Co/Zn carbamate complexes and their usage as precursors of oxide nanoparticles are presented.



Keywords: Cobalt / Zinc / Nanostructures / Heterobimetallic complexes / Carbamates

Organolead Complexes

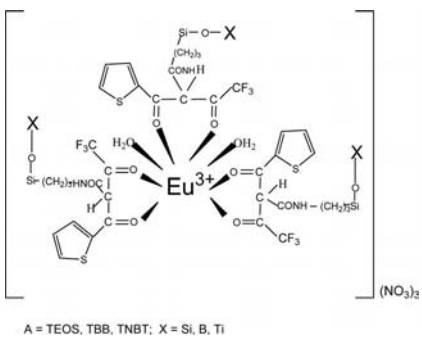
The reaction of diphenyllead(IV) diacetate with semicarbazone/thiosemicarbazone ligands afforded several complexes of diverse stoichiometry, which were studied in both the solid state and solution. Unexpectedly, one complex has the semicarbazone chain of the ligand formally half-deprotonated.



Keywords: Lead / Diphenyllead(IV) / O ligands / S ligands / Partial deprotonation

Europium Hybrid Xerogels

β-Diketone-functionalized polysilsesquioxane bridges behave as linkages in the assembly of europium ions and Si–O–M (M = B or Ti) hybrid xerogels, as they can form covalently bonded Si–O networks after the cohydrolysis and copolycondensation through their alkoxy groups.



Keywords: Organic-inorganic hybrid composites / Europium / Luminescence / Composite xerogels

Nonclassical Tetraazaporpyrins

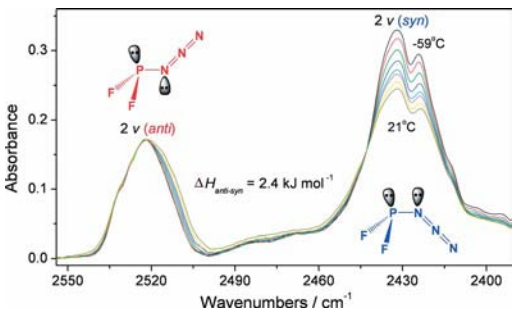
The tetramerization of 2,5-diphenyl-3,4-dicyanothiophene in the presence of $Ru^{III}Cl_3$ and 4-methylpyridine gave a tetrathieno-fused bis(4-methylpyridine)[1,3,5,7,9,11,13,15-octaphenyltetraazaporphyrinato]ruthenium(II) complex. The structure of this product was determined by ^1H NMR, FAB-MS, and X-ray crystallography. UV/Vis and MCD spectra were recorded.

Keywords: Porphyrinoids / Thiophene / Phthalocyanines / Ruthenium

CONTENTS

Conformation Analysis of Phosphanes

Keywords: Azides / Vibrational spectroscopy / Electron diffraction / Conformation analysis / Ab initio calculations



The *syn*/*anti* equilibrium of F_2PN_3 was studied by Raman and temperature-dependent gas-phase and Ar-matrix isolation IR spectroscopy, gas electron diffraction, and quantum chemical calculations.

* 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 5 were published online on February 7, 2011

