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Belgium

France

Sweden

Czech Republic

Austria

Portugal

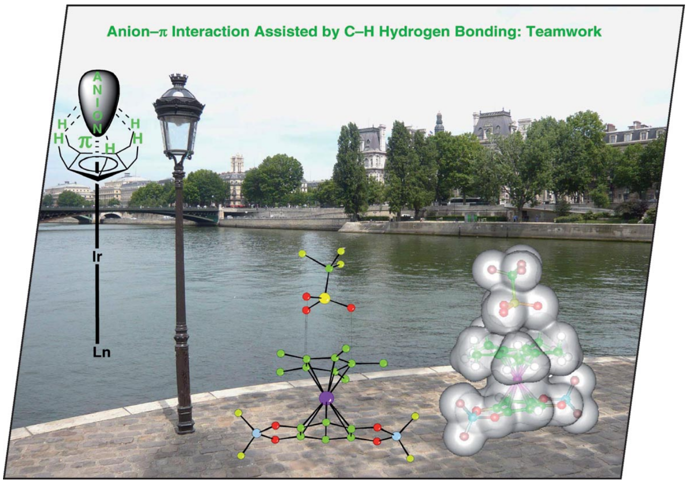
Spain

Netherlands

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 molecular structure of the neutral mononuclear iridium complex Cp*Ir(η^6-$C_6H_2O_4$)(BF_2)$_2$ exhibiting an anion–π interaction between CF_3SO_3 and metallated pentamethylcyclopentadienyl "η-Cp*Ir". Computational analysis (see optimized structure) shows that this type of noncovalent interaction can be better described as a combination of anion–π and CH···anion hydrogen-bonding interactions. Both contributions work in harmony. Details are discussed in the Short Communication by H. Amouri et al. on p. 3703ff. The background depicts the famous réverère "street lamp" of Paris, which resembles the iridium complex holding the anion. The lamp shown in the image is located on Île Saint-Louis, often considered the most romantic part of Paris. The cover picture was designed by H. Amouri.



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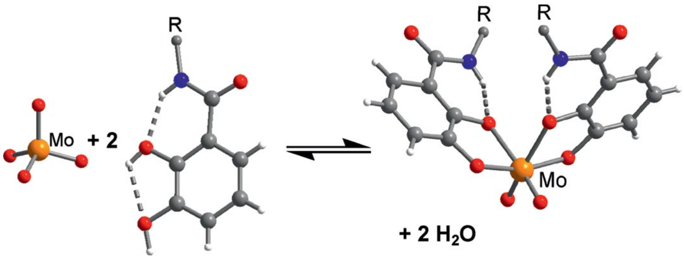
MICROREVIEW

Efficient Molybdenum Chelation

A.-K. Duhme-Klair* 3689–3701

From Siderophores and Self-Assembly to Luminescent Sensors: The Binding of Molybdenum by Catecholamides

Keywords: Molybdenum / Siderophores / Self-assembly / Bioinorganic chemistry / Luminescent sensors



Molybdate reacts with 2,3-dihydroxybenzamide-containing ligands (catecholamides) to give stable orange-coloured *cis*-dioxido-Mo^{VI} complexes. This microreview discusses the role of such complexes in bacterial molybdenum uptake and highlights how their unique properties can be exploited in the self-assembly of supramolecular structures and the development of luminescent chemosensors for molybdate.

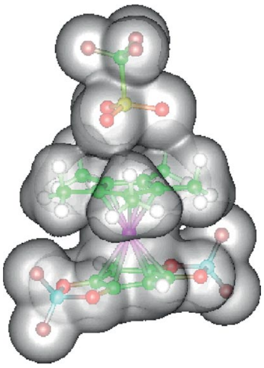
SHORT COMMUNICATIONS

Anion–π Interactions

J. Moussa, V. Gandon, M. N. Rager, M. Malacria, L.-M. Chamoreau, H. Amouri* 3703–3707

An Unusual Anion–π Interaction in an Irido Organometallic Assembly: Synthesis, First Crystal Structure, and Computational Study

Keywords: Reactive intermediates / Pi interactions / Boron / Iridium / Density functional calculations / Arene ligands



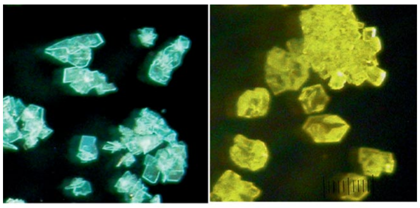
The organometallic assembly $[Cp^*Ir(\eta^6\text{-}C_6H_2O_4)(BF_2)_2(CF_3SO_3)][Cp^*Ir(\mu\text{-}Cl)_3\text{-}IrCp^*]$ (**3**) was prepared and fully characterized. Remarkably, the X-ray molecular structure of **3** shows that an anion–π interaction occurs between the neutral component $Cp^*Ir(\eta^6\text{-}C_6H_2O_4)(BF_2)_2$ of the assembly and the CF_3SO_3 anion. Computational analysis was carried out on **3** to unravel the nature of this noncovalent interaction.

Phosphorescence Color Alteration

M. Osawa,* I. Kawata, S. Igawa, A. Tsuboyama, D. Hashizume, M. Hoshino 3708–3711

Phosphorescence Color Alteration by Changing Counter Anions on Tetrahedral Gold(I) Complexes; Intra- and Interligand –π Interactions

Keywords: Gold / Phosphanes / P ligands / Density functional calculations / Phosphorescence



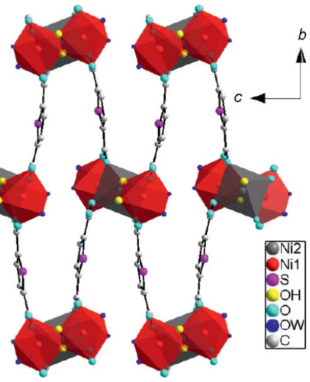
$[Au(dppb)_2]Cl$ $[Au(dppb)_2]PF_6$

A small conformational change, which is caused by changing the counter anion, dramatically alters the optical properties of a tetrahedral gold(I) complex with diphosphane ligands in the solid state.

FULL PAPERS

Magnetic Nickel Polymers

The structure of $\{Ni_3(\mu_3\text{-}OH)_2[(\kappa^1\text{-}\kappa^1)\text{-}(\kappa^1\text{-}\kappa^1)\text{-}\mu_4tdc]_2(\mu_2\text{-}H_2O)_4\}_n$ (H_2tdc = 2,5-thiophenedicarboxylic acid) has been solved by synchrotron powder X-ray diffraction. The polymer is built of $[Ni1O_6]_2[Ni2O_6]$ chains. It behaves as a metamagnet, bearing out the possible tuning of magnetic interaction by different π-electron ligands even at quite large distances.



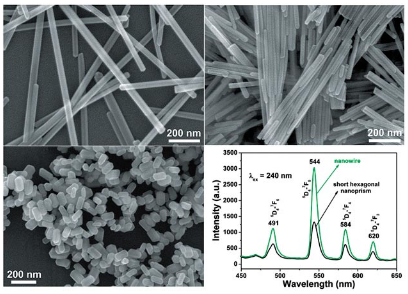
A. Demessence, A. Mesbah, M. François,*
G. Rogez, P. Rabu* **3713–3720**

Structure and Magnetic Properties of a New 1D Nickel(II) Hydroxythiophenedicarboxylate

Keywords: Nickel / Chain structures / Metal–organic frameworks / Magnetic properties

Polymorphic Lanthanum Hydroxide

One-dimensional $La(OH)_3$ nanocrystals with multiform morphologies have been successfully synthesized by a facile hydrothermal process without using any surfactant, catalyst, or template. The morphologies of the products could be modulated by simply adjusting the pH values of the initial solution or by using different kinds of alkaline sources.

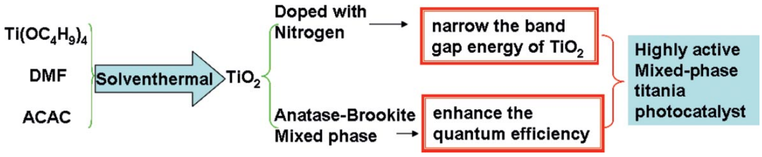


G. Jia, Y. Huang, Y. Song, M. Yang,
L. Zhang, H. You* **3721–3726**

Controllable Synthesis and Luminescence Properties of $La(OH)_3$ and $La(OH)_3$:Tb^{3+} Nanocrystals with Multiform Morphologies

Keywords: Lanthanum / Hydrothermal synthesis / Polymorphism / Luminescence / Nanostructures

N-Doped Ti Nanocatalysts



N-Doped anatase–brookite bicrystal TiO_2 nanocatalysts were successfully designed and synthesized by a facile solvothermal route. Modification of TiO_2 with N dopants narrowed the band gap and extended the absorption light from the UV region to the visible area. The mixing of anatase and brookite enhanced the quantum efficiency of the N-doped TiO_2 samples.

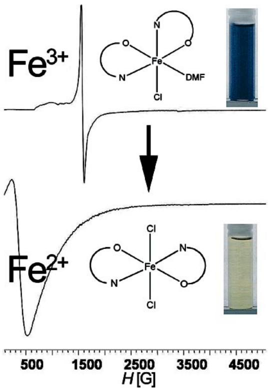
L. Li, C.-y. Liu* **3727–3733**

Facile Synthesis of Anatase–Brookite Mixed-Phase N-Doped TiO_2 Nanoparticles with High Visible-Light Photocatalytic Activity

Keywords: Titanium / Solvothermal synthesis / Photochemistry / Doping

Spontaneous Reduction

Experimental evidence for the spontaneous reduction of new high-spin iron(III) $Fe^{III}(L^{(n)})_2Cl$, L complexes to new high-spin iron(II) $Fe^{II}(HL^{(n)})_2Cl_2$ mononuclear complexes was discovered. These processes were checked by EPR, cyclovoltammetric, and pseudo-steady voltammetric studies.



N. Bouslimani, N. Clément, C. Toussaint,
S. Hameury, P. Turek, S. Choua,
S. Dagorne, D. Martel,
R. Welter* **3734–3741**

Spontaneous Reduction of High-Spin Fe^{III} Complexes Supported by Benzoic Hydrazide Derivative Ligands

Keywords: Iron / Reduction / Structure elucidation / Hydrogen bonds / N,O ligands

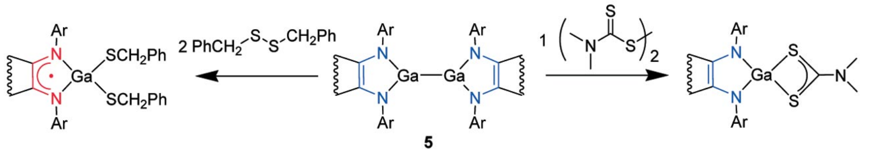
CONTENTS

Redox-Active Ligands

**I. L. Fedushkin,* A. S. Nikipelov,
A. A. Skatova, O. V. Maslova,
A. N. Lukoyanov, G. K. Fukin,
A. V. Cherkasov 3742–3749**

Reduction of Disulfides with Magnesium(II) and Gallium(II) Complexes of a Redox-Active Diimine Ligand

Keywords: Magnesium / Gallium / Redox-active ligands / Disulfides / Reduction



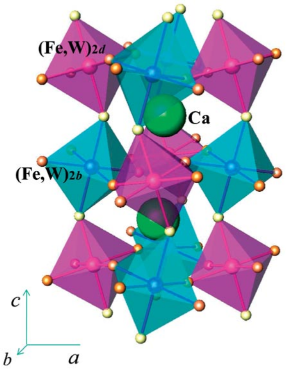
Each metal unit of digallane (dpp-bian)-Ga–Ga(dpp-bian) (**5**) may transfer two electrons to substrates, e.g. dibenzyl disulfides, without breaking the coordination of the dpp-bian ligand to the metal. In the course of the reaction of **5** with $(Ph_2CH_2S)_2$, both ligand and metal are oxidized. Only the Ga center is oxidized when complex **5** reacts with one molar equivalent of tetramethylthiuram disulfide.

Double Perovskites

**M. Retuerto,* J. A. Alonso,
M. J. Martínez-Lope,
M. García-Hernández, C. A. López,
M. del Carmen Viola, J. C. Pedregosa,
M. T. Fernández-Díaz 3750–3757**

A Structural and Magnetic Study of the Series of Double Perovskites $Ca_2Fe_{1+x}W_{1-x}O_6$

Keywords: Perovskite phases / Neutron diffraction / Structure elucidation / Magnetic properties



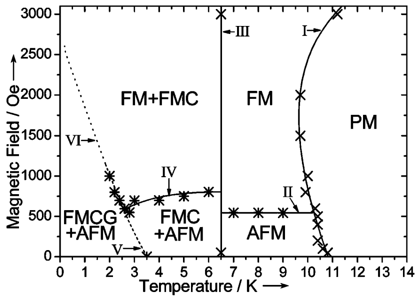
Double perovskites of type $Ca_2Fe_{1+x}W_{1-x}O_6$ show degrees of antisite disordering that increase with the average oxidation state of Fe. These compounds range from a scenario where the antiferromagnetic patches are isolated, to a model where the Fe-rich patches, which are strongly coupled via Fe–O–Fe superexchange interactions, present an excellent coherence across the crystal.

Magnetic Manganese Compounds

T. Yang, Y. Zhang, J. Lin* 3758–3764

Inhomogeneous Magnet $NaMn^{III}$-$[BP_2O_7(OH)_3]$: Ferromagnetic Clusters Inserted in a Metamagnetic Matrix

Keywords: Manganese / Magnetic properties / Inhomogeneity / Cluster glass



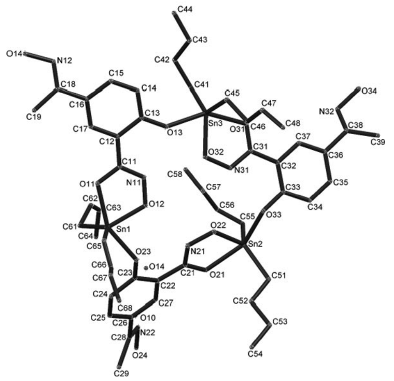
Unlike the magnetic inhomogeneity in mixed-valent manganese perovskites, $NaMn^{III}[BP_2O_7(OH)_3]$ shows the valent singularity of manganese and is simultaneously an unusual inhomogeneous magnetic model, consisting of ferromagnetic clusters and a metamagnetic background.

(Hydroxamato)tin(IV) Complexes

**M. Gajewska, K. V. Luzyanin,
M. F. C. Guedes da Silva, Q. Li,* J. Cui,
A. J. L. Pombeiro* 3765–3769**

Cyclic Trinuclear Diorganotin(IV) Complexes – The First Tin Compounds Bearing Oximehydroxamate Ligands: Synthesis, Structural Characterization and High In Vitro Cytotoxicity

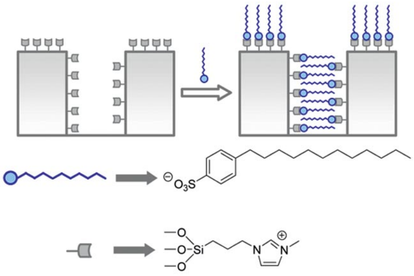
Keywords: Tin / Structure elucidation / N ligands / O ligands / Antitumor agents



The first diorganotin(IV) complexes with a ligated oximehydroxamate were prepared and characterized by single-crystal X-ray diffraction, IR and multinuclear NMR spectroscopy and elemental analyses. They are cyclic trinuclear and the dibutyltin(IV) complex exhibits strong activity in vitro towards various human tumour cells.

Anionic Surfactant Removal

Three new hybrid materials for anionic surfactant removal from water have been prepared by the grafting of imidazolium, amine and pyridine moieties onto a MCM-41 mesoporous scaffold. The hybrid material functionalised with imidazolium cations displays a remarkable maximum surfactant adsorption of 1.5 mmol per gram of material at neutral pH.



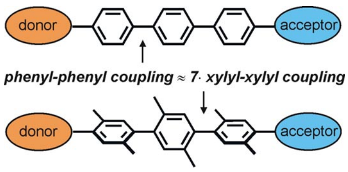
C. Coll, R. Martínez-Máñez,*
M. D. Marcos, F. Sancenón, J. Soto,
R. K. Mahajan* **3770–3777**

Efficient Removal of Anionic Surfactants Using Mesoporous Functionalised Hybrid Materials

Keywords: Adsorption / Mesoporous materials / Surfactants / Surface modification

Electron Transfer

The influence of π-conjugation on the rates of long-range charge tunneling across rigid rod-like molecular bridges has been explored by a direct comparison of substituted and unsubstituted oligo-*p*-phenylene bridges.



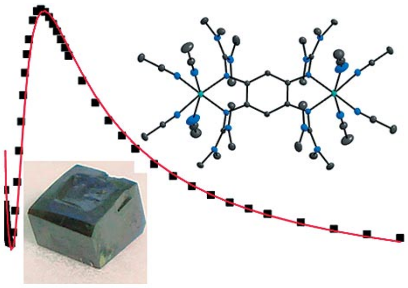
D. Hanss, O. S. Wenger* **3778–3790**

Conformational Effects on Long-Range Electron Transfer: Comparison of Oligo-*p*-phenylene and Oligo-*p*-xylene Bridges

Keywords: Charge transfer / Donor-acceptor systems / Molecular wires / Photochemistry / Ruthenium

Redox-Active Complex Ligands

Excellent electron-donor and redox-active complex ligand: 1,2,4,5-Tetrakis(tetramethylguanidino)benzene (ttmgb) is interesting for various applications. In this work we report on donor–acceptor salts and late-transition-metal complexes of ttmgb.



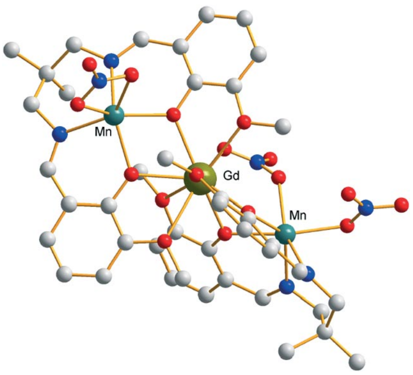
A. Peters, C. Trumm, M. Reinmuth,
D. Emeljanenko, E. Kaifer,
H.-J. Himmel* **3791–3800**

On the Chemistry of the Strong Organic Electron-Donor 1,2,4,5-Tetrakis(tetramethylguanidino)benzene: Electron Transfer in Donor–Acceptor Couples and Binuclear Late Transition Metal Complexes

Keywords: Redox chemistry / N ligands / Electron transfer / Donor–acceptor systems

Mn–Gd Complexes

A trinuclear $Mn^{II}–Gd^{III}–Mn^{II}$ complex, in which the gadolinium ion self-assembles with two Schiff base ligand Mn^{II} units, was characterized by structural determination. Only one ferromagnetic Mn–Gd interaction is active. This behaviour results from the presence of two very different double phenoxido Mn–Gd bridges. Oxidation of this complex does not yield the expected $Mn^{III}–Gd^{III}–Mn^{III}$ entity.



J.-P. Costes,* J. Garcia-Tojal,
J.-P. Tuchagues, L. Vendier ... **3801–3806**

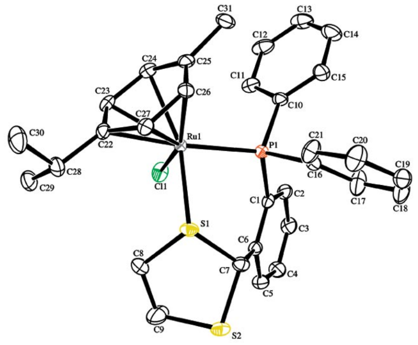
Structural and Magnetic Study of a Trinuclear $Mn^{II}–Gd^{III}–Mn^{II}$ Complex

Keywords: Manganese / Gadolinium / Structure elucidation / Magnetic properties

CONTENTS

Ruthenium−P,S-Donor Complexes

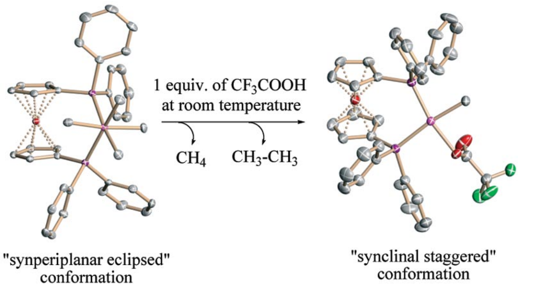
Keywords: Ruthenium / Mixed-donor ligands / P ligands / S ligands / Homogeneous catalysis



The chemistry of phosphanyl−dioxolane and phosphanyl−dithiolane mixed P,S-donor ligands with the Ru^{II} precursors [RuCl$_2$(PPh$_3$)$_3$] and [RuCl$_2$(4-cymene)]$_2$ is reported. Full characterisation of the resulting complexes by ^{1}H, ^{13}C and ^{31}P NMR spectroscopy and X-ray crystallography is presented, and their activity as catalysts for hydrosilylation is examined.

Organoplatinum Chemistry

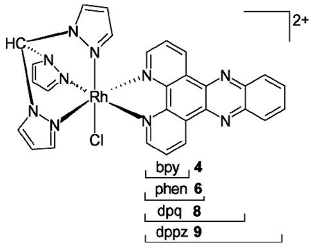
Keywords: Platinum / Metallocenes / P ligands / Conformation analysis



The new tetramethylplatinum(IV) complex [PtMe$_4$(dppf)], in which the chelating dppf ligand is 1,1′-bis(diphenylphosphanyl)ferrocene, was treated with CF$_3$COOH to give CH$_4$, CH$_3$−CH$_3$, and the Pt^{II} complex [PtMe(OCOCF$_3$)(dppf)].

Cytotoxic Rhodium Complexes

Keywords: Rhodium / Polypyridyl ligands / Tris(pyrazolyl)methane / Antitumor agents / DNA cleavage



Stepwise treatment of RhCl$_3$·3H$_2$O or *mer*,*cis*-[RhCl$_3$(DMSO-κ*S*)$_2$(DMSO-κ*O*)] with a polypyridyl ligand (pp) followed by tripodal tris(pyrazolyl)methane (tpm) leads to the formation of complex cations of the type [RhCl(pp)(tpm)]$^{2+}$, whose cytotoxicity towards MCF-7 and HT-29 cells as well as DNA binding and photonuclease properties have been studied.

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* Author to whom correspondence should be addressed.

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