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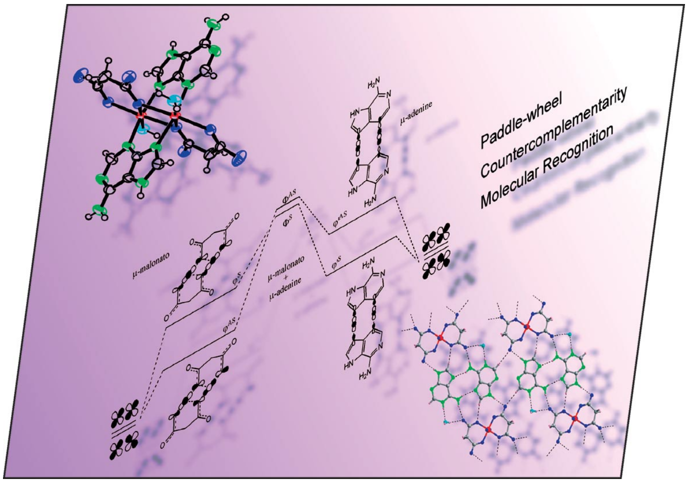
A union formed by chemical societies in Europe (ChemPubSoc Europe) has taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry*. Three further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

COVER PICTURE

The cover picture shows the paddle-wheel motif adopted by the dinuclear complexes in which the metal centres are held together by bridging malonato and bridging neutral adenine ligands, the countercomplementarity of the bridging ligands responsible for their ferromagnetic behaviour, and the molecular recognition processes that take place between the protonated adeninium cations and the anionic copper-malonato fragments. Details are discussed in the article by O. Castillo, A. Luque et al. on p. 3889ff.



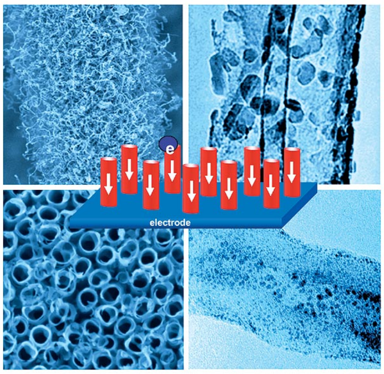
MICROREVIEW

Nanoelectrodes

G. Centi,* S. Perathoner 3851–3878

The Role of Nanostructure in Improving the Performance of Electrodes for Energy Storage and Conversion

Keywords: Nanostructures / Electrode design / Hierarchical design / Lithium / Fuel cells / Solar cells



The role of nanoarchitecture of electrodes for applications ranging from energy storage (Li-ion batteries) to energy conversion (fuel cells, solar devices) is analyzed, with reference to metal oxides (TiO_2, V_2O_5), carbon nanotubes and nanofibres, and their hybrid materials, as well as their use to support noble metal particles.

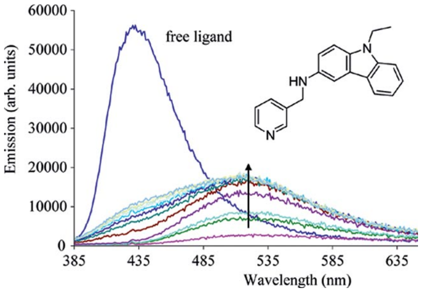
SHORT COMMUNICATIONS

Molecular Logic

S. J. Dickson, A. N. Swinburne, M. J. Paterson, G. O. Lloyd, A. Beeby, J. W. Steed* 3879–3882

A Simple Fluorescent Ion-Pair Binding Host that Acts as an "If-Then" Logic Gate

Keywords: Fluorescence / Molecular logic / Supramolecular chemistry / Molecular devices / Anions / Nitrogen heterocycles / Carbazole



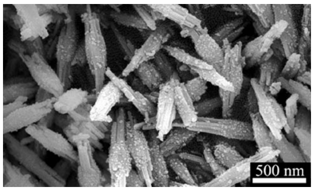
A fluorescent molecular logic gate is quenched by Cu^{2+} but recovers its emission on addition of NO_3^- in accordance with the material conditional logic operation.

Shuttle-Shaped Ceria Nanoparticles

C. Sun,* L. Chen 3883–3887

Controllable Synthesis of Shuttle-Shaped Ceria and Its Catalytic Properties for CO Oxidation

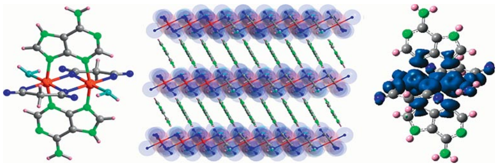
Keywords: Nanostructures / Nanoparticles / Solvothermal synthesis / Ceria / Catalytic properties



This paper describes a solvothermal method for the synthesis of shuttle-shaped ceria and its enhanced catalytic activity for CO oxidation reaction.

FULL PAPERS

Metal–Nucleobase Complexes



Metal-malonato frameworks act as receptors of the adenine nucleobase to give the five compounds whose crystal structures and magnetic properties are reported herein. DFT calculations have been performed to analyze unusual supramolecular interactions and to evaluate the magnetic behaviour of these compounds.

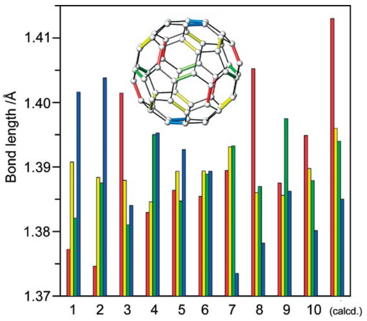
S. Pérez-Yáñez, O. Castillo,* J. Cepeda, J. P. García-Terán, A. Luque,* P. Román **3889–3899**

Analysis of the Interaction between Adenine Nucleobase and Metal-Malonato Complexes

Keywords: Bioinorganic chemistry / Nucleobases / Supramolecular chemistry / Magnetic properties

Fullerene Chemistry

The "break-and-seal" approach was applied to synthesize the new fulleride $[K(DB24C8)(DME)]_2C_{60}\cdot DME$. The C_{60}^{2-} anion is disordered assuming two orientations. The distribution of the bond lengths within the fullerene has been discussed with respect to a Jahn–Teller distortion.



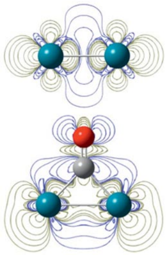
N. V. Kozhemyakina, J. Nuss, M. Jansen* **3900–3903**

Synthesis and Crystal Structure of a New C_{60}^{2-} Fulleride: $[K(DB24C8)(DME)]_2C_{60}\cdot DME$

Keywords: Fullerenes / Fullerides / Crown compounds / Jahn–Teller distortion / X-ray diffraction

Palladium Clusters

A significant occupation of the 5s orbital explains the existence and cohesion of Pd–Pd bonds, which are described by sd hybrid orbitals and present triplet-state small clusters. The adsorption of a CO ligand goes through a back-bonding interaction favoured by a high 4d and a low 5s population that affects the Pd–Pd bond and restores a singlet ground state for the small clusters.



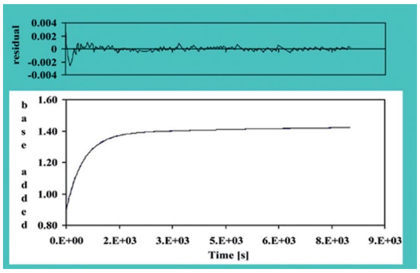
G. Zanti, D. Peeters* **3904–3911**

DFT Study of Small Palladium Clusters Pd_n and Their Interaction with a CO Ligand ($n = 1–9$)

Keywords: Cluster compounds / Palladium / Carbonyl ligands / Density functional calculations

Bio-Relevant Complex Formation

The $[Pd(AEP)Cl_2]$ complex was synthesized and characterized [AEP = 2-(2-aminoethyl)pyridine]. The stoichiometry and stability constants of the complexes formed with various biologically relevant ligands were studied. The kinetics of base hydrolysis of free and coordinated amino acid esters was investigated.



M. R. Shehata, M. M. Shoukry,* F. H. Abdel-Shakour, R. van Eldik* **3912–3920**

Equilibrium Studies on Complex-Formation Reactions of $Pd[(2-(2-aminoethyl)pyridine)(H_2O)_2]^{2+}$ with Ligands of Biological Significance and Displacement Reactions of DNA Constituents

Keywords: Bioinorganic chemistry / Kinetics / Hydrolysis / N,O ligands / N ligands / S ligands / Structure–activity relationships / Palladium complexes

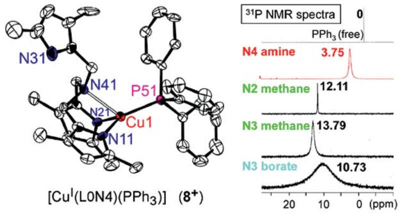
CONTENTS

Cu-N4 Complexes

K. Fujisawa*, S. Chiba, Y. Miyashita, K. Okamoto 3921–3934

Copper Complexes with Neutral N4 Tripodal Ligands: Influence of the Number of Nitrogen Donors on Their Structures, Properties, and Reactivity

Keywords: Copper / N ligands / Ligand effects / Coordination modes / Structure elucidation / Electronic structure



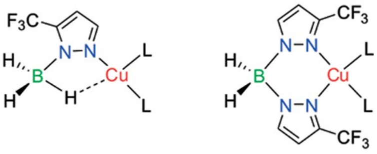
Copper(II) chlorido, nitrato, and sulfato complexes of neutral tetradentate nitrogen-containing amine ligands and two related copper(I) complexes are synthesized in order to investigate the influence of the number of nitrogen donors on their structures, properties, and reactivity

Pyrazolylborate Copper Complexes

H. V. R. Dias,* G. G. Lobbia, G. Papini, M. Pellei, C. Santini* 3935–3941

Copper(I) Isocyanide and Phosphane Complexes of Fluorinated Mono- and Bis(pyrazolyl)borates

Keywords: Copper / Phosphanes / Scorpionate ligands / Isocyanide ligands / Structure elucidation



L = PPh$_3$, CN*t*Bu or CNCy

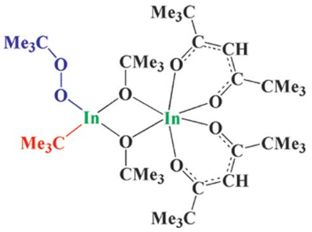
New copper(I) phosphane and isocyanide complexes supported by fluorinated mono- and bis(pyrazolyl)borates have been synthesized and structurally characterized.

Alkylindium Peroxide

W. Uhl,* B. Jana 3942–3947

Bridging and Terminal Arrangement of Alkylperoxo Groups in Organoindium Peroxides

Keywords: Indium / Peroxides / Organoelement compounds



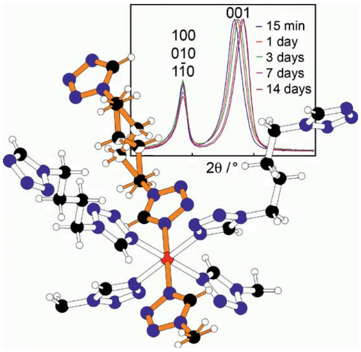
Peroxoindium compounds were obtained by insertion of oxygen molecules into the In–C bonds of bis(*tert*-butyl)indium acetylacetonates. In one case, an oxygen-sensitive In–C bond remained intact despite the close proximity of a terminally arranged *tert*-butylperoxo group.

Spin-State Interactions

G. N. L. Jameson,* F. Werner, M. Bartel, A. Absmeier, M. Reissner, J. A. Kitchen, S. Brooker, A. Caneschi, C. Carbonera, J.-F. Létard, W. Linert* 3948–3959

Anion, Solvent and Time Dependence of High-Spin–Low-Spin Interactions in a 3D Coordination Polymer

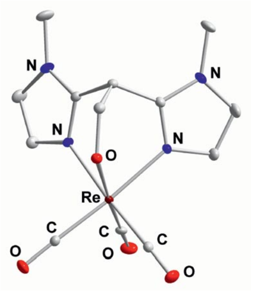
Keywords: Spin crossover / Metal-organic frameworks / Anions / Solvent effects



By using a specific spacer length between coordinating iron atoms, it is possible to form coordination polymers with interactions between iron atoms that can be changed subtly through the anion and the solvent.

Ligand Design

The syntheses of two novel imidazole-based *N*,*N*,*O* and *N*,*N*,*S* ligands 2,2-bis(*N*-methylimidazol-2-yl)ethanol (Hbmie) (**6**) and lithium bis(*N*-methylimidazol-2-yl)dithioacetate Li[bmidta] (**7**) are described. The coordination properties of the two new ligands are studied by the synthesis of rhenium(I) and ruthenium(II) complexes.



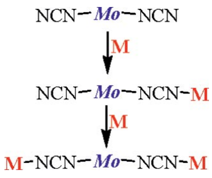
**N. V. Fischer, F. W. Heinemann,
N. Burzlaff*** **3960–3965**

Two New Imidazole-Based Heteroscorpionate Ligands

Keywords: Ligand design / Rhenium / Ruthenium / Nitrogen heterocycles / Tripodal ligands / Heteroscorpionate

Cyanamide Metal Adducts

Heterometallic di- and trinuclear complexes with the bridging cyanoimide NCN^{2-} ligand are assembled upon addition of various transition-metal Lewis acids to the ligated cyanoimides in *trans*-[Mo(NCN)$_2$(dppe)$_2$].

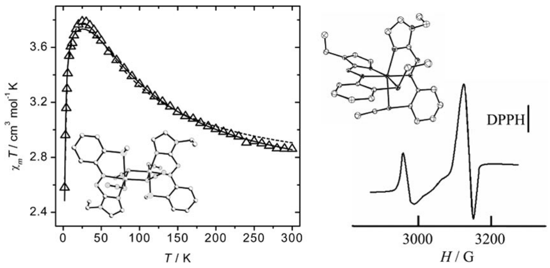


**S. M. P. R. M. Cunha,
M. F. C. Guedes da Silva,*
J. J. R. Fraústo da Silva,
A. J. L. Pombeiro*** **3966–3971**

Cyanoimide-Bridged, Bi- and Trinuclear, Heterometallic Complexes with an NCN–Mo–NCN Phosphinic Core

Keywords: Bridging ligands / Molybdenum / Lewis acids / Lewis bases / Heterometallic complexes

Nickel Complexes



1-Alkyl-2-[(*o*-thioalkyl)phenylazo]imidazole (SRaaiNR′) acts as tridentate chelator in [Ni(SRaaiNR′)$_2$](ClO$_4$)$_2$. Ni^{II}-azido-SRaaiNR′ defines a $\mu_{1,1}$-N$_3$-bridged Ni^{II} dimer and [Ni(SRaaiNR′)(N$_3$)$_2$]$_2$ shows intramolecular ferromagnetic coupling. According to an EPR study, electrochemical oxidation of [Ni(SRaaiNR′)$_2$](ClO$_4$)$_2$ generates a Ni^{III} species.

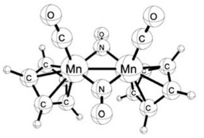
**S. Nandi, D. Bannerjee, J. -S. Wu,
T. -H. Lu, A. M. Z. Slawin, J. D. Woollins,
J. Ribas, C. Sinha*** **3972–3981**

Thioether Bonded Nickel(II)-Azoimidazole Complexes: Structures, Spectra and Electrochemical Oxidation to the Nickel(III) State

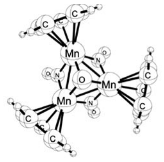
Keywords: Nickel / Electrochemistry / Magnetic properties / Ferromagnetic coupling / Density functional calculations

DFT Studies on Cp(NO)Mn Compounds

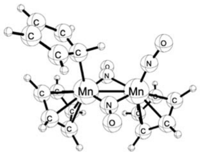
DFT indicates Cp$_2$Mn$_2$(NO)$_2$(CO)$_2$ to have six structures within ca. 3 kcal/mol of each other with various combinations of bridging and terminal CO and NO groups. The triplet structures Cp$_2$Mn$_2$(μ-NO)$_2$(μ-CO) and Cp$_2$Mn$_2$(μ-NO)$_2$ are global minima. The monomer CpMn(NO)$_2$ is predicted to be unstable with respect to dimerization to Cp$_2$Mn$_2$(μ-NO)$_2$(NO)$_2$. The latter molecule has two different structures of similar energies with very different Mn–Mn distances. Structures for Cp$_2$Mn$_2$(μ-NO)$_2$(NO)X (X = NO$_2$ and η^5-C$_5$H$_5$) and Cp$_3$Mn$_3$(μ-NO)$_3$(μ_3-NO) close to the experimental structures are predicted.



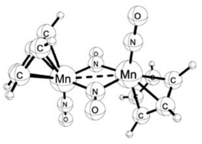
Cp$_2$Mn$_2$(NO)$_2$(CO)$_2$



Cp$_3$Mn$_3$(NO)$_4$



Cp$_2$Mn$_2$(NO)$_3$(η^5-Cp)



Cp$_2$Mn$_2$(NO)$_4$

**B. Yan,* Y. Xie, R. B. King,*
H. F. Schaefer III** **3982–3992**

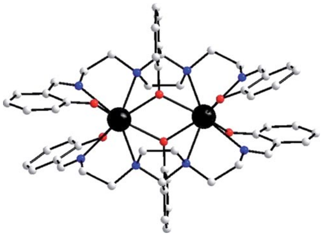
(Cyclopentadienyl)nitrosylmanganese Compounds: The Original Molecules Containing Bridging Nitrosyl Groups

Keywords: Manganese / Nitrosyl ligands / Cyclopentadienyl ligands / Density functional calculations / Bridging ligands / Carbonyl ligands / Structure elucidation

CONTENTS

Photophysical Properties

Keywords: Lanthanides / Schiff bases / Luminescence / Photophysics



Two new doubly μ-phenoxo-bridged homodinuclear Pr^{III} and Nd^{III} complexes have been synthesized by using a heptadentate Schiff base ligand. In the complexes each Ln^{III} center adopts a distorted square antiprism geometry. Detailed photophysical investigations of the precursor ligand and interesting solid-state photoluminescence properties of the Ln complexes in the NIR region have been reported.

CORRECTION

Keywords: Lanthanides / Schiff bases / Luminescence / Photophysics

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* 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 25 were published online on August 19, 2009