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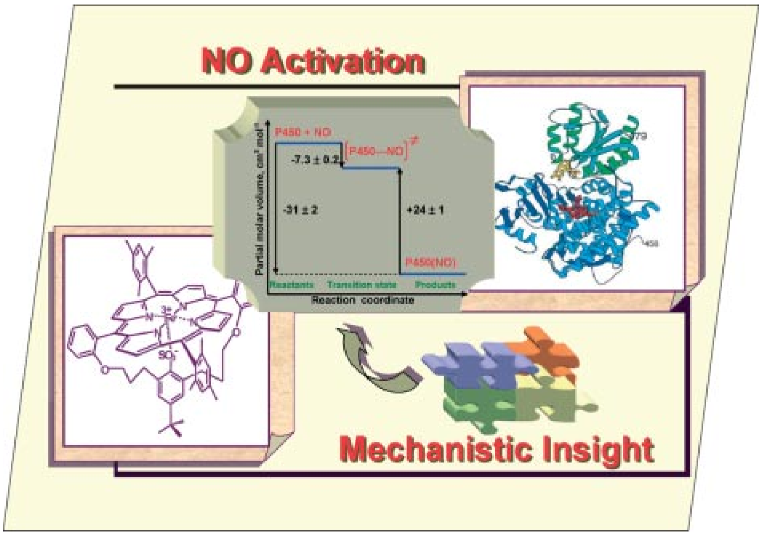
EU ChemSoc

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 mechanistic insight into the activation of NO by biological and model metal complexes can be gained through volume profile analysis. The presented volume profile describes the binding of NO to the high-spin, five-coordinate Fe^{III} centre in cytochrome P450 in the presence of camphor to form a low-spin (diamagnetic), six-coordinate $Fe^{II}-NO^+$ product. Details are presented in the Microreview by R. van Eldik et al. on p. 773ff.



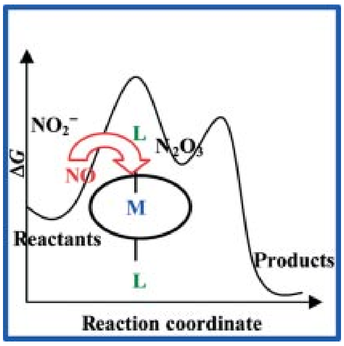
MICROREVIEW

NO Activation

A. Franke, F. Roncaroli, R. van Eldik* 773–798

Mechanistic Studies on the Activation of NO by Iron and Cobalt Complexes

Keywords: Activation of NO / Reductive nitrosylation / Kinetics / Cytochrome P450 / Vitamin B_{12} / Porphyrins / Chelates



The reactions of NO with selected Fe and Co chelates and porphyrins, as well as with cytochrome P450, vitamin B_{12} and model complexes are reviewed. Throughout, the focus is on mechanistic details of the binding and release of NO from metal complexes and on the nature of the stable metal–NO complexes produced in solution.

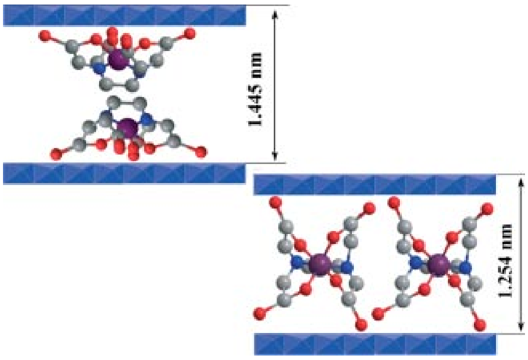
FULL PAPERS

Reorientation of Guests

G. Q. Wu, L. Y. Wang*, L. Yang, J. J. Yang 799–808

Factors Affecting the Interlayer Arrangement of Transition Metal–Ethylenediaminetetraacetate Complexes Intercalated in Mg/Al Layered Double Hydroxides

Keywords: Layered compounds / Intercalation / Metal–edta complexes / Reorientation / Organic–inorganic hybrid composites



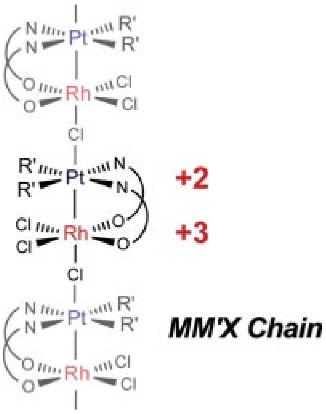
Guests on the Move: Transition metal–edta complex {$[M(edta)]^{2-}$} intercalates of layered double hydroxide (LDH) were obtained by a hydrothermal synthesis method. The observed basal spacings of the LDH complexes, 1.445 nm in Mg_2Al–M(edta) LDH and 1.254 nm in Mg_3Al–M(edta) LDH, were ascribed to bilayer and monolayer arrangements of the incorporated $[M(edta)]^{2-}$, respectively. Heat treatment of the Mg_2Al–M(edta) LDH resulted in similar monolayer arrangements to that found in the Mg_3Al–M(edta) LDH. Rehydration of the calcined solids allows for the recovery of their original bilayer structures upon cooling to room temperature in air.

1D Metal Complexes

K. Uemura, K. Yamasaki, K. Fukui, K. Matsumoto* 809–815

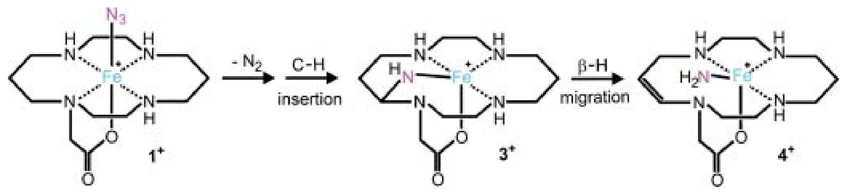
Synthesis, Crystal Structures, and Oxidation States of MM′X-Type Platinum–Rhodium Dinuclear Complexes Having Amidate Bridging Ligands

Keywords: Platinum / Rhodium / 1D Chains / Dinuclear complexes



Two kinds of metal ions are bridged by amidate ligands to form Pt–Rh dinuclear complexes, which exist as pseudo 1D chains (MM′X chain), $[-Pt-Rh-Cl-]_n$, in the crystals. The dinuclear complexes have close metal–metal bond lengths with Pt(+2)–Rh(+3) formal oxidation states.

Metal Azide → Nitrido Complex?



Collision-induced decomposition of the azido complex 1^+ in the gas phase to afford an iron(V) nitrido species appears to be followed by subsequent hydrogen rearrangements to afford isomers 3^+ and 4^+.

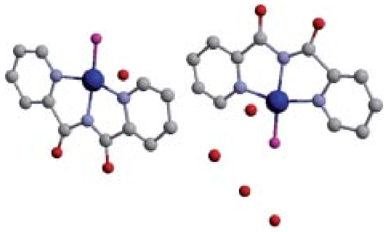
**D. Schröder,* H. Schwarz,
N. Aliaga-Alcalde, F. Neese** **816–821**

Fragmentation of the (Cyclam-acetato)iron Azide Cation in the Gas Phase

Keywords: N ligands / Iron / Azides / Mass spectrometry

Chemical Nucleases

The complexes $[Cu(ptN_2)(OAc)]\cdot 3H_2O$ (**1**), $[Cu(ptO_2)(OAc)(H_2O)]\cdot H_2O$ (**2**), $[Cu(ptN_2)(for)]\cdot 3H_2O$ (**3**), $[Cu(ptO_2)(for)(H_2O)]$ (**4**), $[Cu(ptO_2)(benz)]\cdot H_2O$ (**5**), and $[Cu(ptO_2)F(H_2O)]_2\cdot 3H_2O$ (**6**) are obtained from the reaction of 2,4,6-tri(pyridyl)-1,3,5-triazine (ptz) and copper(II) salts in dmf/water (1:1) as a result of the hydrolysis of ptz. Efficient oxidative DNA cleavage by these compounds is observed in the presence of ascorbate and dioxygen.

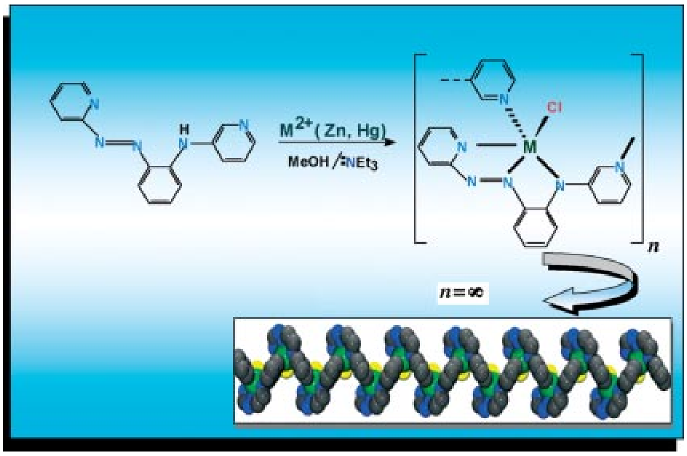


**J. Borrás,* G. Alzuet, M. González-Alvarez,
J. L. García-Giménez, B. Macías,
M. Liu-González** **822–834**

Efficient DNA Cleavage Induced by Copper(II) Complexes of Hydrolysis Derivatives of 2,4,6-Tri(2-pyridyl)-1,3,5-triazine in the Presence of Reducing Agents

Keywords: Copper triazine complexes / Oxidative DNA damage / ROS scavengers / Oxidation

Coordination Polymers



Isolation and characterization of one-dimensional, *zigzag*-chain, metal–organic framework of zinc (Zn^{II}) and mercury (Hg^{II}) with the bridging azo-aromatic ligand 2-[3-(pyridylamino)phenylazo]pyridine is described.

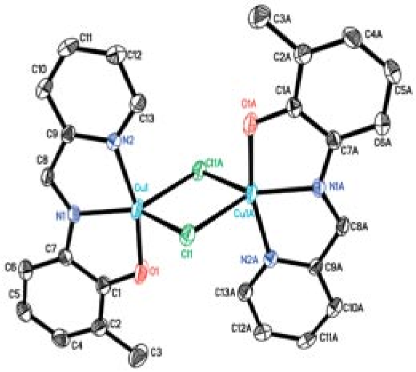
**P. Banerjee, S. Kar, A. Bhaumik, G.-H. Lee,
S.-M. Peng, S. Goswami*** **835–845**

Isolation and Characterization of Zn^{II} and Hg^{II} Coordination Polymers with a Designed Azo-Aromatic Ligand: Identification of Micrometer- and Nanometer-Sized Particles

Keywords: Coordination polymers / Azo-aromatic ligands / d^{10} metal ions / X-ray structures / Nanostructures / Fluorescence

Ferromagnetic Copper Complex

One μ-Cl-bridged dimer $[CuLCl]_2$ with distorted trigonal-bipyramidal geometry and ferromagnetic coupling is reported. A comparison for the magnetic coupling of $[CuLCl]_2$ with other Cu(μ-Cl)$_2$Cu compounds with square-pyramidal and trigonal-bipyramidal geometry is discussed.



**S.-L. Ma, X.-X. Sun, S. Gao, C.-M. Qi,*
H.-B. Huang, W.-X. Zhu** **846–851**

A New Chloro-Bridged Cu^{II} Schiff Base Complex with Ferromagnetic Exchange Interaction

Keywords: Copper / Schiff bases / Dinuclear complex / Crystal structure / Magnetic properties

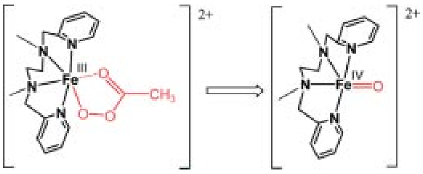
CONTENTS

Bio-Inspired Oxidation Catalysts

E. A. Duban, K. P. Bryliakov, E. P. Talsi* .... 852−857

The Active Intermediates of Non-Heme-Iron-Based Systems for Catalytic Alkene Epoxidation with H_2O_2/CH_3COOH

Keywords: Oxidoiron(IV) complexes / Acylperoxido complexes / EPR spectroscopy / Paramagnetic NMR spectroscopy / Intermediates / Oxidation



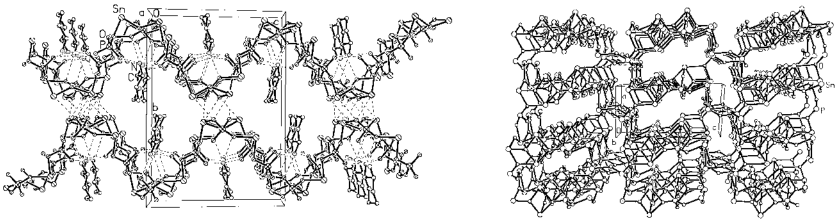
Using ^{1,2}H NMR and EPR spectroscopy, it was shown that the active species of the catalytic systems $[(BPMEN)Fe^{II}](ClO_4)_2/H_2O_2/CH_3COOH$ and $[(TPA)Fe^{II}](ClO_4)_2/H_2O_2/CH_3COOH$ are the respective mononuclear iron(IV)-oxido complexes $[(BPMEN)Fe^{IV}{=}O]^{2+}$ and $[(TPA)Fe^{IV}{=}O]^{2+}$.

Tin(II) Phosphate Frameworks

X.-j. Yuan, Y.-Z. Li, Y. Xu, X.-z. You,* R. J. Linhardt* .... 858−864

Synthesis of Tin(II) Phosphate Open Frameworks Using Isomers of 1,2-Diaminocyclohexane as Template

Keywords: Tin(II) phosphate / Open framework / Templated hydrothermal synthesis / Leaching



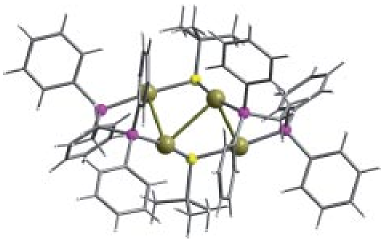
A novel layered framework of tin(II) phosphate, $[Sn_4(PO_4)_3(OH)]^{2-}\cdot$ [*trans*-1,2-$C_6H_{10}(NH_3)_2]^{2+}$ and a neutral inorganic phosphate framework, $(Sn_3O)_2(Sn_2O)_2(PO_4)_4$, are reported.

Cationic Au^I Alkanethiolates

A. Battisti, O. Bellina, P. Diversi,* S. Losi, F. Marchetti, P. Zanello .... 865−875

Preparation, Structure and Reactivity of Polynuclear Gold(I) Phosphanyl Alkanethiolates

Keywords: Gold(I) complexes / Tertiary phosphane complexes / Thiolates / Aurophilicity / Redox behaviour



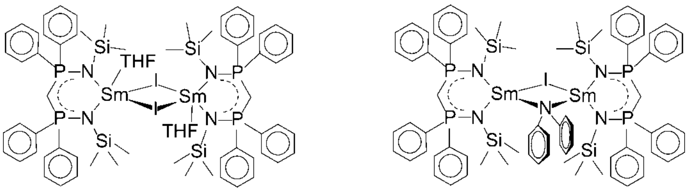
The cationic gold(I) phosphanyl alkanethiolates of formula $[Au_2(SR)_2(phosphane)_2][BF_4]$ (R = CMe_3, CH_2CMe_3, CH_2CHMe_2) have been prepared and characterized. Their structures in the solid state are dimeric with the arrangement of the tetragold core depending on the phosphane. Their reactivity with nucleophiles has also been studied.

Sm-Based Polymerization Catalysts

M. Wiecko, P. W. Roesky,* V. V. Burlakov, A. Spannenberg* .... 876−881

Bis(phosphinimino)methanides as Ligands in Divalent Samarium Chemistry: Synthesis, Structures and Catalysis

Keywords: Catalysis / Caprolactone / N,P ligands / Polymerization / Samarium



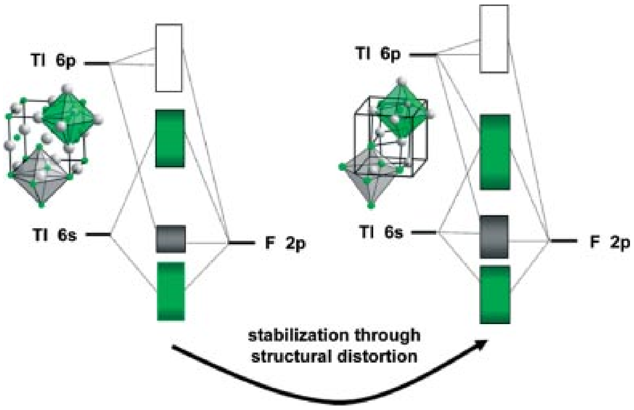
Three bis(phosphinimino)methanide complexes of divalent samarium, namely $[\{(Me_3SiNPPh_2)_2CH\}Sm(\mu\text{-}I)(thf)]_2$, $[\{(Me_3SiNPPh_2)_2CH\}_2Sm]$, and $[(\{(Me_3SiNPPh_2)_2CH\}Sm)_2(\mu\text{-}I)(\mu\text{-}NPh_2)]$, are synthesized and the former is investigated as a catalyst for the polymerization of ε-caprolactone.

Stereochemical Activity of e$^-$ Lone Pairs

A.-V. Mudring* 882–890

Thallium Halides – New Aspects of the Stereochemical Activity of Electron Lone Pairs of Heavier Main-Group Elements

Keywords: Halides / Thallium / Electron lone pairs



The stereochemical activity of lone pairs of heavier main-group elements is determined by the antibonding interaction with their surroundings. These unfavourable interactions can be minimised by structural distortions, which lead to a net stabilisation of the compound.

Selenium Chemistry

G. Hua, Y. Li, A. M. Z. Slawin,
J. D. Woollins* 891–897

Synthesis of Novel Vinylic P–Se Heterocycles from Selenation of Alkynes by $[PhP(Se)(\mu\text{-}Se)]_2$

Keywords: Selenium / Heterocycles / Alkynes / Woollins' reagent / Cycloaddition

Reaction of $[PhP(Se)(\mu\text{-}Se)]_2$ (Woollins' reagent) with alkynes gives new vinylic $C_2P(Se)Se_2$ rings and an unexpected intramolecular cycloaddition product.