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European Journal of Inorganic Chemistry

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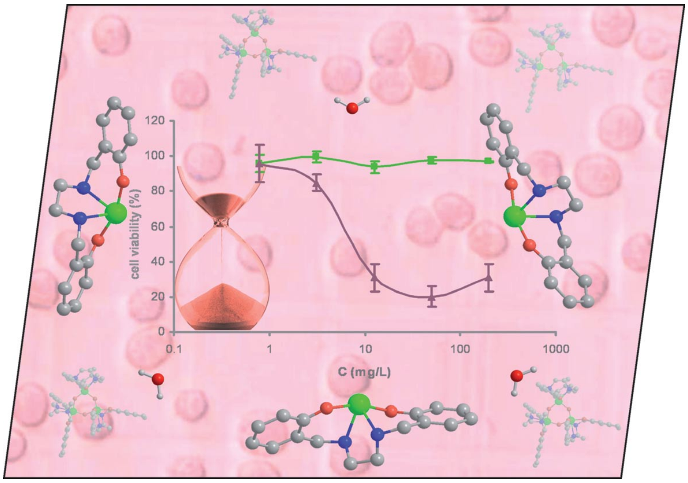
A union formed by chemical societies in Europe (ChemPubSoc Europe) has taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry*. Three further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

COVER PICTURE

The cover picture shows the cytotoxic activity of diamine bis(phenolato) bis(isopropoxo) Ti^{IV} complexes, which is strongly dependent on ligand features and on incubation time and period of water exposure, as represented metaphorically by the hourglass. Particularly slow hydrolysis of the isopropoxo groups enables cell insertion of an active species, while upon water addition in the absence of cells, a highly stable phenolato-bound trinuclear cluster is formed, which is inactive. The results obtained thus far with this new family of cytotoxic Ti^{IV} compounds in the context of the current knowledge of the activity and operation mode of established Ti^{IV} cytotoxic complexes is described in the Microreview by E. Y. Tshuva and J. A. Ashenhurst on p. 2203ff.



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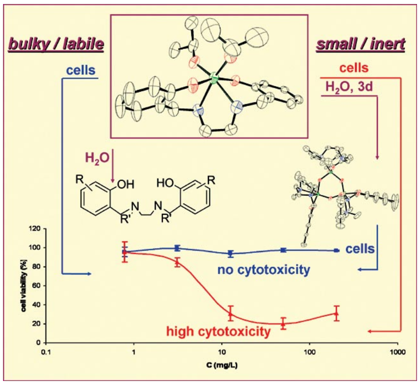
MICROREVIEW

Cytotoxic Ti(IV) Complexes

E. Y. Tshuva,*
J. A. Ashenhurst 2203–2218

Cytotoxic Titanium(IV) Complexes: Renaissance

Keywords: Titanium(IV) / Phenolato ligands / Coordination modes / Hydrolysis / Cytotoxicity / Titanocene dichloride / Budotitane / Cisplatin



A new versatile family of cytotoxic amine–phenolato Ti^{IV} complexes demonstrates favored hydrolysis features which are ligand-dependent and strongly correlated to cytotoxicity. Inert small ligands lead to cytotoxic complexes, which slowly form inactive ligand-bound clusters with water, while complexes of bulky/labile phenolato ligands mostly hydrolyze to release all free ligands and are inactive.

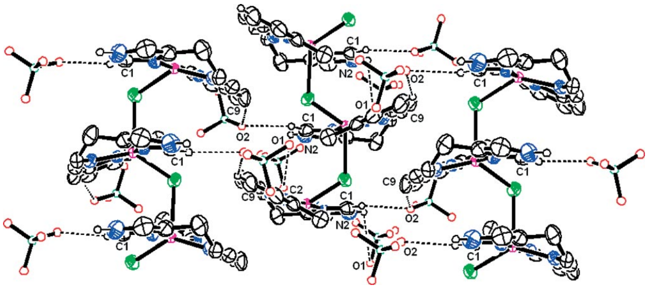
FULL PAPERS

Biomimetic Enzyme-Free Sensor

W. A. Alves,* I. O. Matos,
P. M. Takahashi, E. L. Bastos,
H. Martinho, J. G. Ferreira, C. C. Silva,
R. H. de Almeida Santos, A. Paduan-Filho,
A. M. Da Costa Ferreira* 2219–2228

A Chloro-Bridged Linear Chain Imine-Copper(II) Complex and Its Application as an Enzyme-Free Amperometric Biosensor for Hydrogen Peroxide

Keywords: Sensors / Enzyme-free biosensors / Hydrogen peroxide detection / Copper(II) complexes / Structural characterization / Magnetic properties



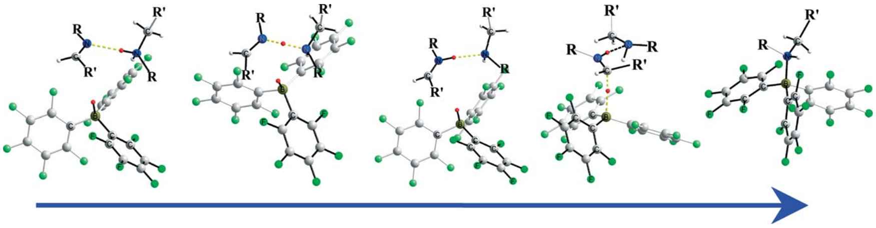
A new inorganic-organic zigzag copper(II) complex, characterised both spectroscopically and magnetically, was linked covalently to the poly(*N*-vinylimidazole) polymer, PVI, on a vitreous carbon electrode surface and used as biomimetic material for the efficient analytical determination of hydrogen peroxide.

Lewis Acid-Catalyzed Reduction

T. Privalov* 2229–2237

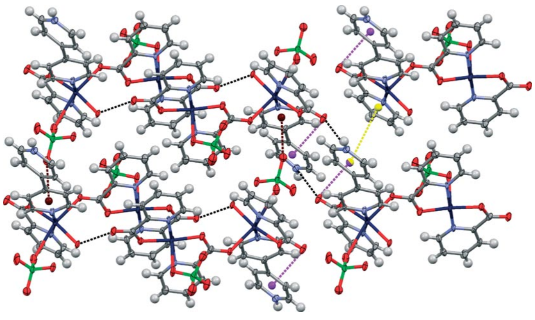
The Role of Amine–$B(C_6F_5)_3$ Adducts in the Catalytic Reduction of Imines with H_2: A Computational Study

Keywords: Hydrogenation / Density functional calculations / Amines / Boranes / Autocatalysis



The ability of an ammonium-hydridoborate couple to transfer the proton and the hydride to an imine, as well as all other steps involved in the catalytic reduction of imines by $B(C_6F_5)_3$ and H_2, are revealed by accurate density functional calculations.

Noncovalent Interactions



A Cu^{II} complex with protonated 4,4′-bipyridine and 2-picolinate units shows noncovalent anion−π, lone-pair−π, π−π and hydrogen-bonding interactions in the solid state. The anion−π and lone-pair−π interactions are characterised by Bader's theory of "atoms in molecules". An ab initio study has been performed to analyse the anion−π binding affinity of the pyridine ring.

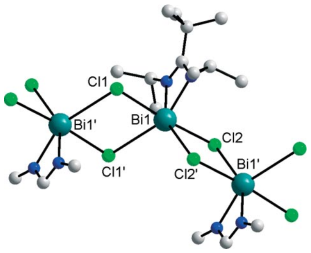
C. Biswas, M. G. B. Drew, D. Escudero, A. Frontera,* A. Ghosh* .... **2238−2246**

Anion−π, Lone-Pair−π, π−π and Hydrogen-Bonding Interactions in a Cu^{II} Complex of 2-Picolinate and Protonated 4,4′-Bipyridine: Crystal Structure and Theoretical Studies

Keywords: Ab initio calculations / Noncovalent interactions / Hydrogen bonds / Copper / Pi interactions

Amidinate Complexes

X-ray crystal structures of six amidinate complexes $[RC(NR')_2]ECl_2$ of the heaviest group 15 metals (Sb, Bi) clearly reveal the distinguished influence of both the metal atom and the amidinate substituent to the coordination geometry of the resulting complexes.



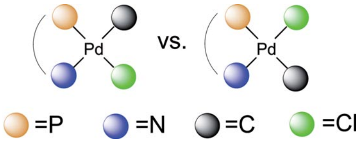
B. Lyhs, S. Schulz,* U. Westphal, D. Bläser, R. Boese, M. Bolte .... **2247−2253**

Heteroleptic Amidinate Complexes of Heavy Group 15 Elements − Synthesis, X-ray Crystal Structures and Theoretical Calculations

Keywords: N ligands / Main group elements / Antimony / Bismuth

Isomeric Preference

The structural preference of isomers of palladium complexes with chelating P,N-donor ligands is discussed and interpreted on the basis of the Maximum Hardness Principle with DFT calculations.



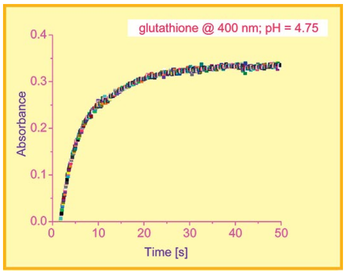
O. del Campo, A. Carbayo, J. V. Cuevas,* G. García-Herbosa, A. Muñoz .... **2254−2260**

Isomeric Preference in Complexes of Palladium(II) with Chelating P,N-Donor Ligands

Keywords: Isomeric preference / Platinum / Coordination / Density functional calculations / Hardness / Palladium

Pd Complex Formation Mechanism

Complex-formation reactions of $[Pd(AEP)(H_2O)]^{2+}$, where AEP = 1-(2-aminoethyl)-piperazine, with biologically relevant ligands were studied as a function of selected nucleophiles and pH by potentiometric, UV/Vis spectrophotometric and quantum chemical techniques. Coordination of glutathione involved substitution and intramolecular isomerization from N- to S-bonded.



T. Soldatović, M. Shoukry, R. Puchta, Ž. D. Bugarčić, R. van Eldik* .... **2261−2270**

Equilibrium and Kinetic Studies of the Reactions between Aqua[1-(2-aminoethyl)-piperazine]palladium(II) and Biologically Relevant Nucleophiles

Keywords: Palladium / Kinetics / Reaction mechanisms / N ligands / Equilibrium / Biomolecules / Glutathione / Antitumor agents

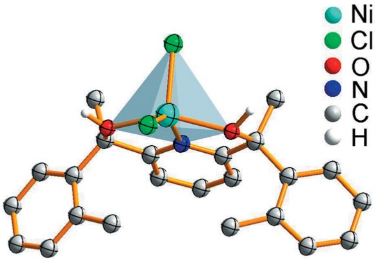
CONTENTS

Oxido Pincer Ligands

A. Klein,* S. Elmas,
K. Butsch 2271–2281

💻 Oxido Pincer Ligands – Exploring the Coordination Chemistry of Bis(hydroxymethyl)pyridine Ligands for the Late Transition Metals

Keywords: N,O ligands / Ligand design / Transition metals / Binding modes / UV/Vis spectroscopy



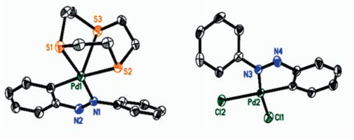
The coordination chemistry of 2,6-bis(hydroxymethyl)pyridine-based oxido pincer ligands with late transition metals reveals the formation of molecular species (complexes) in the solid state and in solution. The observed structural motifs – square-planar, trigonal-bipyramidal, square-pyramidal or octahedral – are in part interconvertible depending on the central metal atom and the solvent.

Cyclometallated Pd Complexes

R. Y. C. Shin, C. L. Goh, L. Y. Goh,*
R. D. Webster, Y. Li 2282–2293

💻 A Cyclometallated (Azobenzene)palladium(II) Complex of 1,4,7-Trithiacyclononane: Synthesis and Reactivity with Thioether-Dithiolate Metalloligands, Single-Crystal X-ray Diffraction Analyses and Electrochemical Studies

Keywords: Palladium / Heterometallic complexes / S ligands / Ruthenium / Crown compounds



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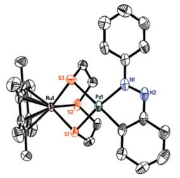

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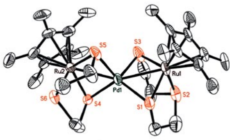

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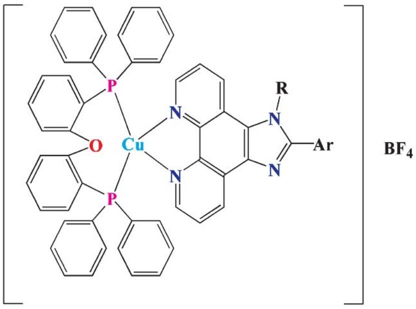
The cyclometallated complexes [(azobenzene)Pd(9S3)][X] {X = PF_6^- (**6A**), [(azobenzene)$PdCl_2$]$^-$ (**6B**)} have been prepared from the reaction of [{Pd(C_6H_4N=NC_6H_5)(μ-Cl)}$_2$] (**5**) with 1,4,7-trithiacyclononane (9S3). The reaction of **5** or **6A** with [(HMB)Ru^{II}{η^3-tpdt}] [**3**; HMB = η^6-C_6Me_6, tpdt = S($CH_2CH_2S^-$)$_2$] and [(Cp*)-Ru^{III}{η^3-tpdt}] (**4**) results in the heterobimetallic species **7** and **8**, respectively.

Copper(I) Complexes

L. Shi, B. Li* 2294–2302

💻 A Series of Cu^I Complexes Containing 1,10-Phenanthroline Derivative Ligands: Synthesis, Characterization, Photophysical, and Oxygen-Sensing Properties

Keywords: Luminescence / Copper / N ligands / Sensors



A series of copper(I) complexes was synthesized and characterized. Their photophysical and oxygen-sensing properties were studied systematically.

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* Author to whom correspondence should be addressed.

💻 Supporting information on the WWW (see article for access details).