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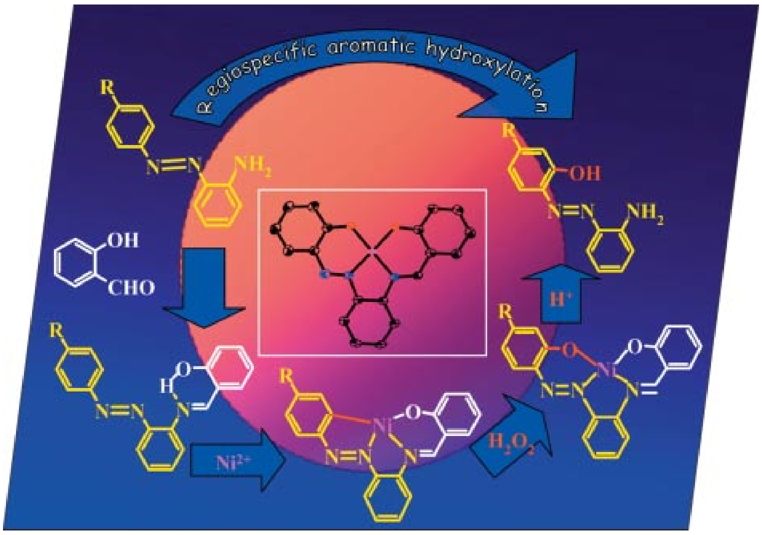
The EUChemSoc Societies have taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry.* Three further EUChemSoc Societies (Austria, Czech Republic and Sweden) are Associates of the two journals.

COVER PICTURE

The cover picture shows the reaction sequence of an Ni^{II}-assisted regiospecific *ortho*-aromatic hydroxylation. Sequential events of orthonickelation, oxygen insertion into the Ni–C bond induced by H_2O_2 and demetallation have been demonstrated to be involved in the aromatic hydroxylation in 2-(arylazo)aniline. The H_2O_2-induced O insertion into the Ni–C bond led to the formation of *metalloazosalophen* analogues of *metallosalophens* for the first time. Details are discussed in the article by S. Chattopadhyay et al. on p. 4263f.



CONTENTS

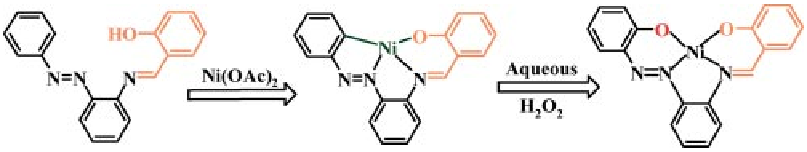
FULL PAPERS

Metal-Assisted Synthesis

P. Pattanayak, J. Lal Pratihar, D. Patra, A. Burrows, M. Mohan, S. Chattopadhyay* **4263–4271**

Regiospecific *ortho*-Aromatic Hydroxylation via Cyclonickelation Using Hydrogen Peroxide and Other Oxygen Donors: Synthesis of Metalloazosalophens

Keywords: Nickel / N,O ligands / Metallacycles / Oxygenation / Peroxo reagents / C–H activation



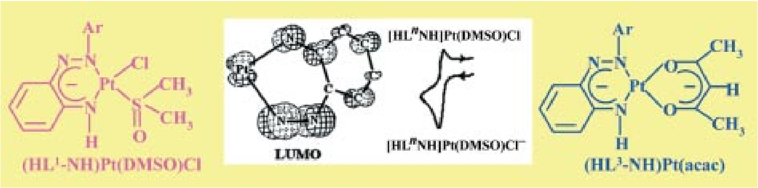
The first metalloazosalophen complexes, $(OL_{sal})Ni$, were prepared by a Ni^{II}-assisted route. Ni–C bond formation and subsequent facile oxygen insertion induced by peroxo reagents *m*CPBA, TBHP, or aqueous H_2O_2 were exploited for this purpose.

Pt^{II} and Pd^{II} Chelates

J. Lal Pratihar, B. Shee, P. Pattanayak, D. Patra, A. Bhattacharyya, V. G. Puranik, C. H. Hung, S. Chattopadhyay*................. **4272–4281**

Synthesis, Structure, and Reactivity of Diazoketiminato Complexes of Platinum(II) and Palladium(II): Cytotoxic Properties of a Platinum Complex

Keywords: Chelating ligands / Platinum / Palladium / Redox chemistry / Bioinorganic chemistry



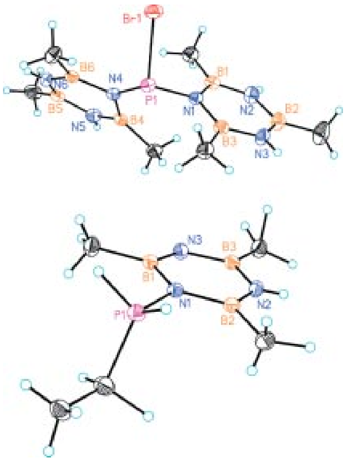
New Pt^{II} complexes incorporating delocalized diazoketimine ligands have been prepared and their chemical, electrochemical, and cytotoxic properties studied. A strategy to prepare an electroactive model Pt^{II}-based antitumor drug has emerged as a consequence.

Phosphanes, Arsanes and Stibanes

H. Nöth,* B. Gemünd, R. T. Paine **4282–4297**

N-(2,4,6-Trimethylborazinyl)-Substituted Phosphanes, Arsanes, and Stibanes

Keywords: Boron / Phosphanes / Arsenic / Antimony



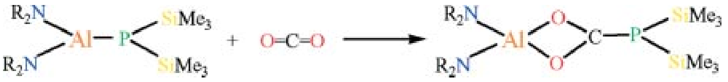
N-Monolithio-*B*,*B*′,*B*′′-trimethylborazine reacts with PX_3, AsX_3, or SbX_3 (X = Cl, Br) to give the *N*-trimethylborazinyl-substituted phosphanes, arsanes, and stibanes $(Me_3B_3N_3H_2)_nEX_{3-n}$ (E = P, As, Sb; n = 1, 2, 3). Treatment of $(Me_3B_3N_3H_2)_2PCl$ with $LiAlH_4$ in diethyl ether gives the phosphane $(Me_3B_3N_3H_2)_2PH$, while $(Me_3B_3N_3H_2)PBr_2$ yields the zwitterionic compound $[Me_3B_3(NH)N(N^{-}\text{-}P^{+}H_2Et)]$. Dehalogenation of $(Me_3B_3N_3H_2)_2PBr$ with Na yields the corresponding diphosphane, and dehalogenation of $(Me_3B_3N_3H_2)PBr_2$ the corresponding cyclotetraphosphane.

(Amino)(phosphanyl)alumane Chemistry

T. Habereder, H. Nöth,* R. T. Paine* **4298–4305**

Synthesis and Reactivity of New Bis(tetramethylpiperidino)(phosphanyl)alumanes

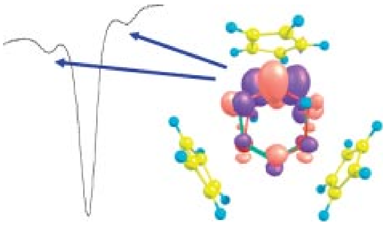
Keywords: Aminoalumanes / Phosphanylalumanes / Carbon dioxide insertion / Phosphanylcarbonate ligand / Structure elucidation



The bis(amino)(phosphanyl)alumane, $tmp_2AlP(SiMe_3)_2$, undergoes selective insertion in the Al–P bond, not the Al–N bonds, with CO_2, COS and CS_2.

Aqueous Reduction of $[Cp^*_2W_2O_5]$

Two related triangular tungsten clusters, 3-electron $[Cp^*_3W_3O_4(OH)_2]^{2+}$ and 2-electron $[Cp^*_3W_3O_6]^+$ obtained by aqueous reduction of $[Cp^*_2W_2O_5]$, are described.



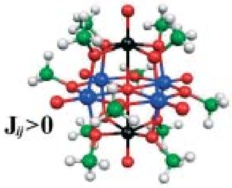
C. Dinoi, P. Sözen, G. Taban, D. Demir, F. Demirhan,* P. Prikhodchenko, J. Gun, O. Lev, J.-C. Daran, R. Poli* .... 4306−4316

Aqueous Reduction of $[Cp^*_2W_2O_5]$: Characterization of the Triangular Clusters $[Cp^*_3W_3O_4(OH)_2]^{2+}$ and $[Cp^*_3W_3O_6]^+$ – Comparison with Molybdenum

Keywords: Tungsten / O ligands / Metal clusters / Density functional calculations

Ferroexchange in Polyoxovanadates

DFT calculations suggest that the V^{IV}/V^{V} mixed-valence alkoxo-polyoxovanadate $[4V^{IV} + 2V^{V}]$ is valence-trapped and characterized by ferromagnetic interactions between the vanadium(IV) centers.



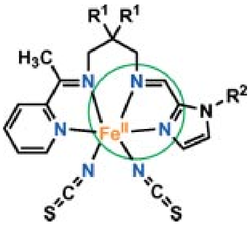
E. M. Zueva,* S. A. Borshch,* M. M. Petrova, H. Chermette, A. M. Kuznetsov .... 4317−4325

Ferromagnetic Coupling in a Mixed-Valence Hexavanadate Core: Quantum-Chemical Forecast

Keywords: Mixed-valent compounds / Vanadates / Density functional calculations / Exchange interactions / Electron transfer

Fe^{II} Spin-Crossover Complexes

1-*N*-R^2-Imidazole-2-carboxaldehyde (R^2 = H, Me) was used as a carbonyl synthon for the synthesis of symmetrical and dissymmetrical tetradentate Schiff bases. In the symmetrical series the NCS^- moieties are *trans* for R^2 = H and *cis* for R^2 = Me. In the dissymmetrical series the electronic behaviour evidences that the combination of pyridyl and imidazolyl rings allows the generation of an intermediate ligand field suitable for spin crossover.



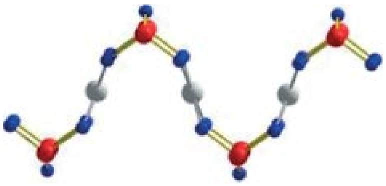
N. Bréfuel,* S. Shova, J.-P. Tuchagues* .... 4326−4334

Fe^{II} Bistable Materials with Dissymmetrical Ligands: Synthesis, Crystal Structure, Magnetic and Mössbauer Properties of Fe^{II} Complexes Based on N_4 Schiff Bases Possessing 2-Pyridyl and 1-R-Imidazol-2-yl Rings

Keywords: Schiff bases / N ligands / Iron / Spin crossover / Magnetic properties / Mössbauer spectroscopy

Oxoanionic Palladium Compounds

Elemental palladium can be oxidized by selenic acid at elevated temperatures to form $Pd(SeO_3)$, $Pd(SeO_4)$, or $Pd(Se_2O_5)$, depending on the reaction conditions. These compounds are the first oxoselenates of a platinum-group metal.



A. Arndt, M. S. Wickleder* ... 4335−4339

$Pd(SeO_3)$, $Pd(SeO_4)$, and $Pd(Se_2O_5)$: The First Palladium Oxoselenates

Keywords: Solid-state structures / Palladium / Selenium / Lone-pair effect / IR spectroscopy

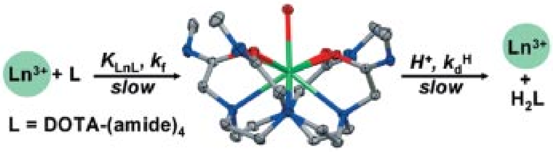
CONTENTS

Ln–DOTA Complexes

A. Pasha, G. Tircsó,* E. Tircsóné Benyó, E. Brücher, A. D. Sherry* 4340–4349

Synthesis and Characterization of DOTA-(amide)$_4$ Derivatives: Equilibrium and Kinetic Behavior of Their Lanthanide(III) Complexes

Keywords: Magnetic resonance imaging / Contrast agents / Protonation constants / Stability constants / Kinetics



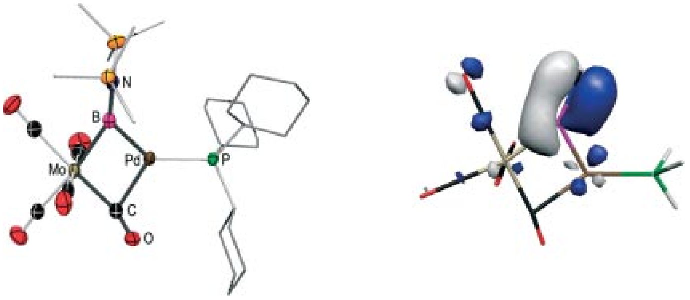
The stabilities of the lanthanide(III) DOTA-(amide)$_4$ complexes are several orders of magnitude lower than the stabilities of the corresponding [Ln(DOTA)]$^-$ complexes. The formation rates of the [Ln{DOTA-(MeAm)$_4$}]$^{3+}$ complexes proved to be slow, following second-order reaction kinetics. The rates of acid-catalyzed dissociation of [Eu{DOTA-(MeAm)$_4$}]$^{3+}$ complexes, however, are also quite slow, which suggests that these complexes may ultimately prove suitable for in vivo applications.

Molybdenum Borylene Complexes

H. Braunschweig,* K. Radacki, K. Uttinger 4350–4356

Synthesis and Characterisation of Semi-Bridging Molybdenum Borylene Complexes

Keywords: Boron / Borylene complexes / Molybdenum / Palladium / DFT calculations



A variety of heterodinuclear borylene complexes was obtained from the reaction of [(OC)$_5$Mo=B=N(SiMe$_3$)$_2$] with [M(PCy$_3$)$_2$] (M = Pd, Pt). Structural studies and DFT computations revealed that the borylene ligand adopts a semi-bridging position.

Functionalized Polyoxometalates

F. Bannani, R. Thouvenot,* M. Debbabi* 4357–4363

Synthesis and Characterization of New Organosilyl Derivatives of Polyoxometalates $(n\mathrm{Bu}_4\mathrm{N})_2[\mathrm{NbW}_5\mathrm{O}_{19}\mathrm{SiRR'}_2]$ (R = R′ = Et, *i*Pr, O*t*Bu, Ph; R = *t*Bu and R′ = Me) – The X-ray Crystal Structure of $(n\mathrm{Bu}_4\mathrm{N})_2[\mathrm{NbW}_5\mathrm{O}_{19}\mathrm{SiPh}_3]$

Keywords: Polyoxometalates / Organic–inorganic hybrid / Multinuclear NMR spectroscopy

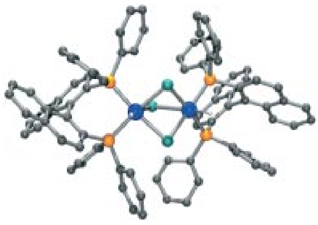
The selective coordination of electrophilic fragments $\{\mathrm{SiRR'}_2\}^+$ to the terminal $\mathrm{O_t(Nb)}$ oxygen of the $\mathrm{NbW_5O_{19}}^{3-}$ Lindqvist-type polyoxometalate leads to the formation of organic–inorganic hybrids. These species are characterized by multinuclear NMR, IR, and Raman spectroscopy. A single-crystal X-ray study of $(n\mathrm{Bu}_4\mathrm{N})_2[\mathrm{NbW}_5\mathrm{O}_{19}\mathrm{SiPh}_2]$ supports the structure postulated on the basis of ^{183}W NMR study.

C=O Hydrogenation

L. Dahlenburg,* R. Menzel, F. W. Heinemann 4364–4374

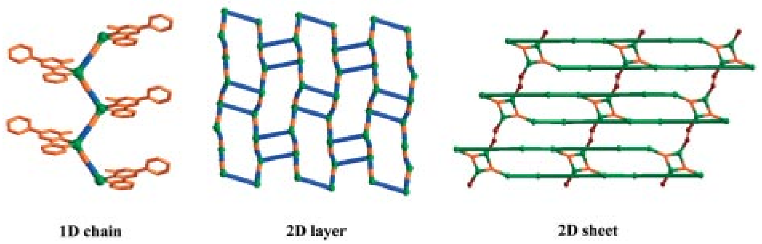
Synthesis and Catalytic Applications of Chiral Hydridoiridium(III) Complexes with Diamine/Bis(monophosphane) and Diamine/Diphosphane Coordination

Keywords: ridium / N ligands / P ligands / Asymmetric catalysis



The triply chlorido-bridged cation [{(*R*)-binap}$_2$Ir$_2$H$_2$(μ-Cl)$_3$]$^+$ serves as a source of mixed-ligand compounds [Ir(H)(Cl)-(diamine){(*R*)-binap}]$^+$ that are otherwise difficult to prepare. The use of such diamine/(*R*)-binap-containing Ir^{III} complexes as (pre)catalysts for the enantioselective hydrogenation of acetophenone provides optical yields close to those of established Ru^{II} catalysts bearing identical ligands.

Tuning Coordination Polymers



Three ligand isomers, namely 2-amino-4,6-bis(2-pyridyl)pyrimidine (L^1), 2-amino-4-(2-pyridyl)-6-(4-pyridyl)pyrimidine (L^2), and 2-amino-4-(2-pyridyl)-6-(3-pyridyl)pyrimidine (L^3), are synthesized and employed in the copper(I) cyanide system. A novel 2D corrugated layer $[Cu_2(CN)_2L^1]_n$ (**1**), 1D zigzag chains $[CuCNL^2]_n$ (**2**) and $[CuCNL^3]_n$ (**4**), and a 2D sheet $[Cu_3(CN)_3L^3]_n$ (**3**) are successfully synthesized and their structures determined by single-crystal X-ray diffraction. These complexes demonstrate the tuning effect of the ligand isomerism upon the dimensionalities and motifs of the crystal structures.

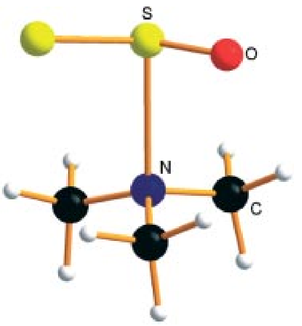
Y.-N. Chi, F.-Y. Cui, Y.-Q. Xu, C.-W. Hu* **4375–4384**

The Tuning Effect of 2-Amino-4,6-dipyridylpyrimidine Isomers on the Structural Dimensionalities and Motifs of Copper(I) Cyanide Complexes

Keywords: Copper / Chelating ligands / N ligands / Crystal engineering

Sulfur–Nitrogen Bonds

The acceptor molecules SO_2, S_2O, S_3, and $SOCl_2$ react with NH_3 and NMe_3 to form donor–acceptor complexes that are most stable in a polar environment with a high dielectric constant. The interaction enthalpy and the S–N bond length of the complexes are inversely related to each other.



R. Steudel,* Y. Steudel **4385–4392**

Charge-Transfer Complexes between the Sulfur Molecules SO_2, S_2O, S_3, SONH, and $SOCl_2$ and the Amine Donors NH_3 and NMe_3 – A Theoretical Study

Keywords: Ab initio calculations / Donor–acceptor systems / Thermodynamics / Sulfur / Solvent effects