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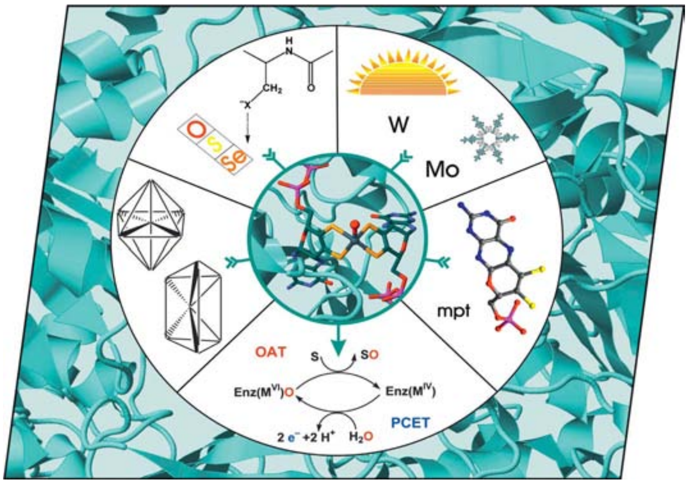
COVER PICTURE

The cover picture shows the different aspects that contribute to the optimisation of processes catalysed by molybdenum- and tungsten-dependent oxidoreductases, such as active-site geometry, proteinic and non-proteinic ligands, temperature and the metal itself. At the centre, the inorganic site of tungsten-substituted DMSO reductase from *Rhodobacter capsulatus* is shown (generated with Jmol; PDB-ID 1E18). Details are presented in the Microreview by C. Schulzke on p. 1189ff.



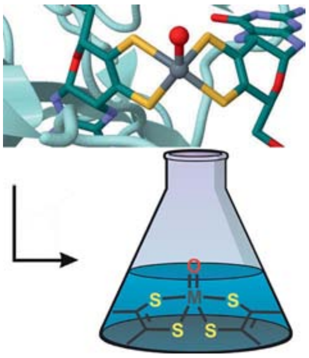
MICROREVIEW

MoCo and WCo Model Chemistry

C. Schulzke* **1189–1199**

Molybdenum and Tungsten Oxidoreductase Models

Keywords: Bioinorganic chemistry / Enzyme models / Oxidoreductases / Redox chemistry / Structure–activity relationships



Molybdenum and tungsten cofactor model chemistry is aimed at a detailed understanding of nature's strategy to optimise oxo transfer reactions. A selection of studies on structure–activity relationships, the role of the metal and evolutionary aspects is discussed in detail, giving a personal view of this interesting and important topic.

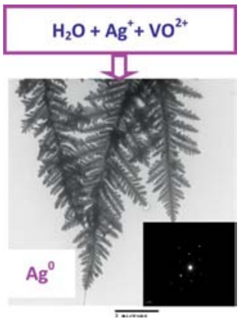
SHORT COMMUNICATION

Simple Dendrite Synthesis

B. Keita,* L. R. Brudna Holzle,
R. N. Biboum, L. Nadjo,
I. M. Mbomekalle, S. Franger, P. Berthet,
F. Brisset, F. Miserque,
G. A. Ekedi **1201–1204**

Green Wet Chemical Route for the Synthesis of Silver and Palladium Dendrites

Keywords: Nanoparticles / Nanostructures / Dendrites / Silver / Palladium



The simple mixing of Ag^+ and VO^{2+} in water, at room temperature, results in the very efficient synthesis of silver nanodendrites in the absence of any template or surfactant. The same procedure proved successful for the synthesis of Pd nanodendrites.

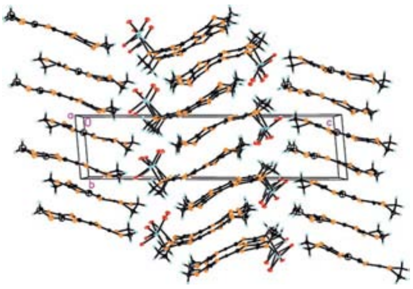
FULL PAPERS

Electrocrystallization

F. Schödel, U. Tutsch, F. Isselbächer,
D. Schweitzer, I. Sänger,
M. Bolte, J. W. Bats, J. Müller,
M. Lang, M. Wagner,
H.-W. Lerner* **1205–1211**

Structural and Electronic Characteristics of a Novel BEDT-TTF Derivative: $[BEDT-TTF]_2[Cu_2Br_3]$

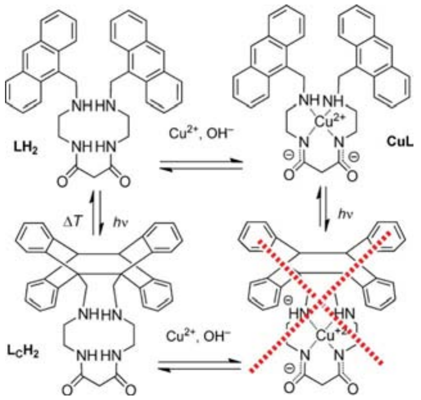
Keywords: Conducting materials / Semiconductors / Copper / Bromine / Tetrathiafulvalene / Electrochemistry / Oxidation



Crystals of a novel type of BEDT-TTF salt, $[BEDT-TTF]_2[Cu_2Br_3]$, were obtained by the BEDT-TTF electro-oxidation with the electrolyte molar ratio $[Ph_4P][N(CN)_2]$:CuBr of 1:8 in a mixture of THF and ethyleneglycol, whereas crystals of κ-$[(BEDT-TTF)_2][Cu(N(CN)_2)Br]$ were formed with the electrolyte molar ratio $[Ph_4P][N(CN)_2]$:CuBr of 1:1.

Photoswitchable Receptors

Two anthracene fragments were added to the edges of a linear dioxotetramine ligand in order to exploit photocyclization and obtain a photoswitchable selective receptor for Cu^{II}, with a cavity that can be closed on command. The new ligand can also be used for the photorelease of protons in aqueous solution, as a result of photoinduced pK_a modulation.



G. Dacarro, P. Ricci, D. Sacchi, A. Taglietti* .... 1212−1218

An Anthracene Based Photoswitchable Dioxo-Tetraaza Ligand Selective for Cu^{II} and Capable of Photochemical pK_a Modulation

Keywords: N ligands / Macrocyclic ligands / Receptors / Molecular devices / Photochromism

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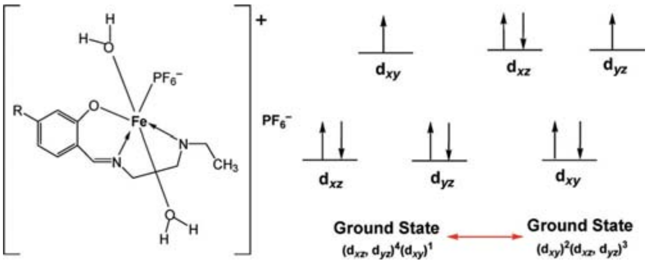
Metallomesogens



We synthesized a novel compound, namely a liquid crystalline iron(III) Schiff base complex with the asymmetric ligand $[Fe(L)X(H_2O)_2]^+X^-$, where X = PF_6^- is the counterion. This compound has a labile low-spin electron configuration that switches between the $(d_{xz},d_{yz})^4(d_{xy})^1/(d_{xy})^2(d_{xz},d_{yz})^3$ ground states and is temperature-dependent.

N. Domracheva,* A. Pyataev, R. Manapov, M. Gruzdev, U. Chervonova, A. Kolker .... 1219−1229

Structural, Magnetic and Dynamic Characterization of Liquid Crystalline Iron(III) Schiff Base Complexes with Asymmetric Ligands

Keywords: Iron / EPR spectroscopy / Electronic structure / Molecular dynamics / Metallomesogens / Magnetic properties

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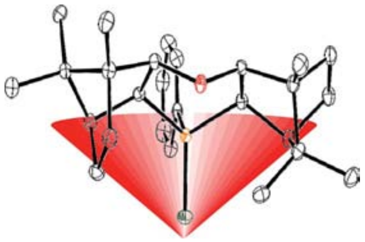
Phosphinane Ligand Complexes

The stereoelectronic features of the phosphacycle ligand shown in the graphic [n = 1, Z = S (**1**); n = 1, Z = Se (**2**); n = 1, Z = $Fe(CO)_4$ (**3**); n = 1, Z = $W(CO)_5$ (**4**); n = 2, Z = *trans*-Rh(CO)Cl (**5**)] have been assessed through synthesis and characterisation of a number of relevant derivatives. The empirical data support the classification of the ligand as a bulkier analogue of PPh_3.



P. G. Edwards, B. M. Kariuki, M. Limon, L.-L. Ooi, J. A. Platts, P. D. Newman* .... 1230−1239

Metal Complexes of a Structurally Embellished Phosphinane Ligand: An Assessment of Stereoelectronic Effects

Keywords: P ligands / Phosphinane ligand / Phosphorus heterocycles / Carbonyl ligands

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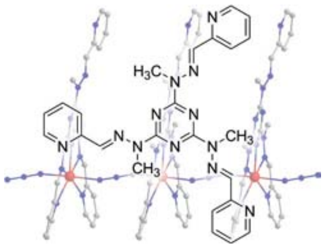
Triazine Ligands

A new triazine-based ligand (L) features threefold symmetry and three potentially tridentate $\{N_3\}$ binding pockets, but binds only a single Mn^{II} by using one of the triazine N atoms and two of its chelate arms. Using azide as an additional ligand, the $\{LMn^{II}\}$ building blocks can form mononuclear, binuclear, and 1D chain structures with heptacoordinate metal ions.



A. Das, S. Demeshko, S. Dechert, F. Meyer* .... 1240−1248

A New Triazine-Based Tricompartmental Ligand for Stepwise Assembly of Mononuclear, Dinuclear, and 1D-Polymeric Heptacoordinate Manganese(II)/Azido Complexes

Keywords: Manganese / Azides / N ligands / Magnetic properties / Coordination polymer

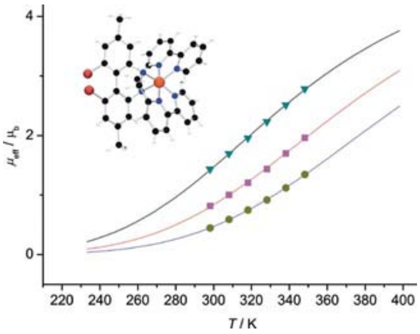
CONTENTS

Spin Crossover Complexes

H. Petzold,* S. Heider 1249–1254

N,*N*′-Bis(2,2′-bipyridine-6-ylmethyl)-2,2′-biphenylenediamines: A Tuneable Ligand Scaffold for Room Temperature Fe^{2+} SCO Complexes

Keywords: Iron / Spin crossover / N ligands / Steric effects / Solution studies



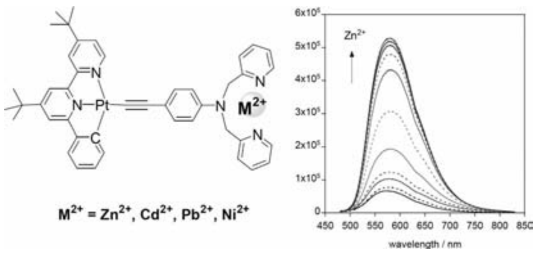
A new series of ligands with an AB_2 structure were synthesized and employed in Fe^{2+} SCO complexes. ΔH, ΔS and $T_{1/2}$ for the SCO were determined using Evans' method. The results clearly show a dependency of the spin state on the substitution pattern. The steric effects of substituents placed at the 6 and 6′ positions in the biphenyl moiety are effectively transported through the biphenyl bridge.

(Dipicolylanilino)platinum Acetylides

P.-H. Lanoë, J.-L. Fillaut,* V. Guerchais,*
H. Le Bozec,
J. A. G. Williams 1255–1259

Metal Cation Induced Modulation of the Photophysical Properties of a Platinum(II) Complex Featuring a Dipicolylanilino–Acetylide Ligand

Keywords: Platinum / Luminescence / Cations / Alkyne ligands



Metal cation dependent modulation of the photophysical properties of a platinum(II) complex featuring a dipicolylanilino–acetylide ligand is described. The ground-state absorption and excited-state luminescence of the complex are modulated by binding of divalent metal ions; the extent of the observed changes was found to be dependent upon the identity of the metal ion.

Bridged Diiron Complexes

F. Marchetti, S. Zacchini, M. Salmi,
L. Busetto, V. Zanotti*............ 1260–1268

C–H Activation in Diiron Bridging Vinyliminium Ligands: Reaction with CS_2 to Form New Zwitterionic Complexes Acting as Organometallic Ligands

Keywords: Zwitterions / Iron / C–H activation / Allenes

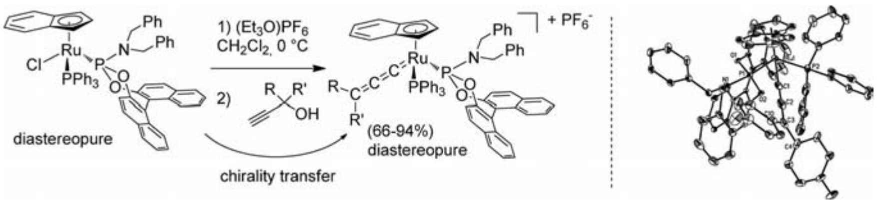
C–H activation and addition of CS_2 provide bridging C_3 ligands in diiron complexes bearing a dithiocarboxylate group. The resulting zwitterionic complexes can act as organometallic ligands with Pd or Fe metal fragments.

Allenylidene Complexes

S. Costin, A. K. Widaman, N. P. Rath,
E. B. Bauer 1269–1282

Synthesis and Structural Characterization of a Series of New Chiral-at-Metal Ruthenium Allenylidene Complexes

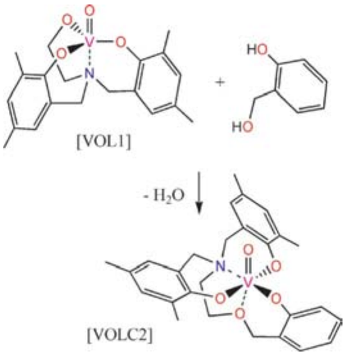
Keywords: P ligands / Ruthenium / Chirality



Chiral-at-metal ruthenium chloro indenyl phosphoramidite complexes have been converted into the corresponding allenylidene complexes, some of which have been structurally characterized. The chiral information was transferred from the chloro precursor complexes to the allenylidene complexes, which were obtained as optically pure diastereomers. Only one diastereomer was formed during the syntheses.

Oxidovanadium Complexes

[VO(acac)$_2$] or [VO(OPr)$_3$] reacts with aminoethanol bis(phenol)s to form [VOL1]-type complexes, which are monomers or dimers in the solid state but monomers in solutions. In wet polar solvents [VOL1] (**1**) undergoes an *N*-alkyl elimination to form 3,5-dimethylsalicyl alcohol, which reacts further with **1** and the condensation product [VOLC1] can be isolated. A similar condensation product [VOLC2] is formed when **1** is heated in dry acetonitrile with salicyl alcohol.

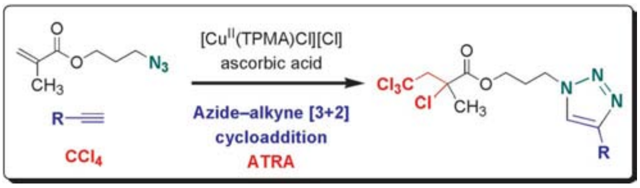


O. Wichmann,* H. Sopo, A. Lehtonen, R. Sillanpää* .... **1283−1291**

Oxidovanadium(V) Complexes with Aminoethanol Bis(phenolate) [O,N,O,O′] Ligands: Preparations, Structures, *N*-Dealkylation and Condensation Reactions

Keywords: Vanadium complexes / Condensation reaction

Synthetic Methods



One-pot sequential reactions involving azide−alkyne [3+2] cycloaddition and atom transfer radical addition (ATRA) catalyzed by [Cu^{II}(TPMA)X][X] {X = Br$^-$ or Cl$^-$, TPMA = tris(2-pyridylmethyl)amine} complexes in the presence of ascorbic acid as a reducing agent are reported. Reactions proceeded efficiently to yield highly functionalized polyhalogenated esters containing the triazolyl group by using as low as 0.5 mol-% of the copper catalyst.

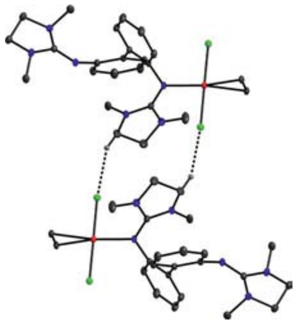
C. L. Ricardo, T. Pintauer* ... **1292−1301**

One-Pot Sequential Azide−Alkyne [3+2] Cycloaddition and Atom Transfer Radical Addition (ATRA): Expanding the Scope of In Situ Copper(I) Regeneration in the Presence of Environmentally Benign Reducing Agent

Keywords: ATRA / Copper / Radical reactions / Synthesis design / Cycloaddition

Bisguanidine Ligands

Bisguanidine ligands with biphenyl or binaphthyl backbones have been synthesized and some aspects of their coordination chemistry analysed.



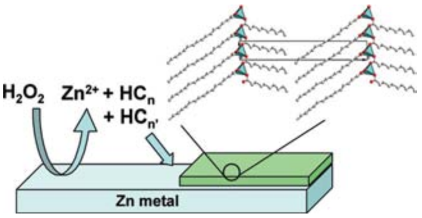
A. Maronna, E. Bindewald, E. Kaifer, H. Wadepohl, H.-J. Himmel * .... **1302−1314**

Synthesis and Characterization of Novel Guanidine Ligands Featuring Biphenyl or Binaphthyl Backbones

Keywords: Platinum / Coordination modes / Guanidine / Biaryl compounds

Metal−Organic Frameworks

New zinc-based metal−organic frameworks (MOFs), binary zinc carboxylates ZnC$_n$C$_{n'}$ with C$_n$ and C$_{n'}$ = CH$_3$(CH$_2$)$_{n-2}$COO$^-$, have been synthesised and characterised for anti-corrosion applications on zinc. The crystallographic structures demonstrate the great flexibility of these MOFs in modifying the insolubility and hydrophobicity of the protective coatings on metals in an aqueous solvent process.



A. Mesbah, S. Jacques, E. Rocca,* M. François, J. Steinmetz ...... **1315−1321**

Compact Metal−Organic Frameworks for Anti-Corrosion Applications: New Binary Linear Saturated Carboxylates of Zinc

Keywords: Metal−organic frameworks / Zinc / Carboxylate ligands / X-ray diffraction / Surface chemistry

CONTENTS

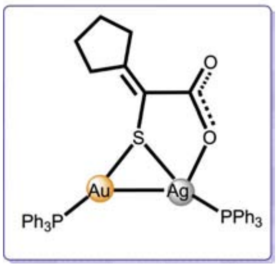
Mixed-Metal Cytotoxic Complexes

E. Barreiro, J. S. Casas, M. D. Couce, A. Laguna,* J. M. López-de-Luzuriaga, M. Monge, A. Sánchez, J. Sordo,* J. M. Varela, E. M. V. López .... 1322−1332

A Dinuclear Gold(I)−Silver(I) Derivative of 2-Cyclopentylidene-2-sulfanylacetic Acid and Related Complexes: Synthesis, Crystal Structures, Properties and Antitumor Activity

Keywords: Gold / Silver / Sulfanylcarboxylic acids / NMR spectroscopy / Luminescence / Cytotoxicity

[$AgAu(PPh_3)_2(cpa)$]



A dinuclear gold(I)−silver(I) compound was prepared and characterised, and its luminescence and cytotoxicity were studied. A comparative study with related gold(I)−gold(I) and silver(I)−silver(I) compounds was carried out in the solid state and in solution.

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* Author to whom correspondence should be addressed.

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