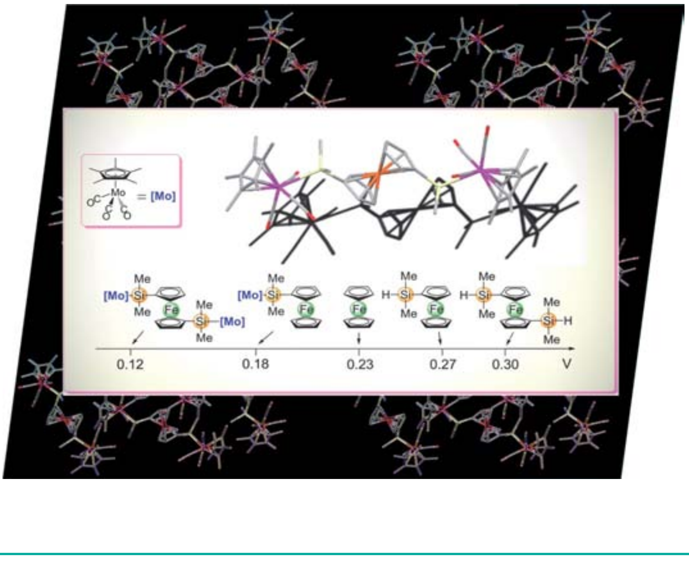
HUNGARY
ITALY
GERMANY
GREECE
CZECH REPUBLIC
FRANCE
SWEDEN
BELGIUM
AUSTRIA
PORTUGAL
POLAND
SPAIN
NETHERLANDS

EurJIC is a journal of ChemPubSoc Europe, a union of 16 European chemical societies formed for the purpose of publishing high-quality science. All owners merged their national journals to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry*.

Other ChemPubSoc Europe journals are *Chemistry – A European Journal*, *ChemBioChem*, *ChemPhysChem*, *ChemMedChem*, *ChemSusChem*, *ChemCatChem, ChemPlusChem and ChemistryOpen.*

COVER PICTURE

The cover picture shows the results of the electrochemical investigation (cyclic voltammetry) of various silylferrocene derivatives and the crystal structure of $[\{Cp^*(CO)_3MoSiMe_2C_5H_4\}_2Fe]$. These results reveal that the $HSiMe_2$ and $Cp^*Mo(CO)_3(SiMe_2)$ groups have electron-withdrawing and electron-donating properties, respectively. Details of the synthesis, the electrochemical properties and the first structurally characterized silyl–molybdenum complexes connected by a 1,1′-metallocenylene unit are discussed in the article by H. Nakazawa et al. on page 5496ff.



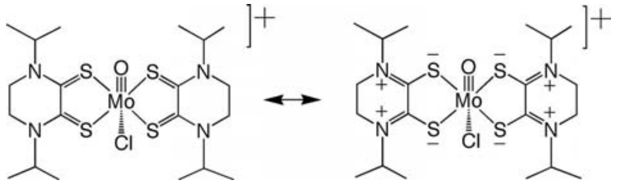
SHORT COMMUNICATION

Dizwitterionic Dithiolenes

R. P. Mtei, E. Perera, B. Mogesa, B. Stein, P. Basu,* M. L. Kirk* 5467–5470

A Valence Bond Description of Dizwitterionic Dithiolene Character in an Oxomolybdenum–Bis(dithione) Complex

Keywords: S ligands / Zwitterions / Electronic structure / Molybdenum / Redox chemistry / Dithiolene / Dithione



Metallodithiolene non-innocence is explored in $[Mo^{4+}O(iPr_2Pipdt)_2Cl][PF_6]$ (Pipdt: *N*,*N′*-piperazine-2,3-dithione), which possesses a piperazine ring as an integral part of the dithiolene ligand and displays unusual spectroscopic features for a formally reduced Mo^{IV}–dithiolene complex. The electronic structure of the ligand can be described in valence bond terms as a resonance hybrid of dithione and dizwitterionic dithiolene.

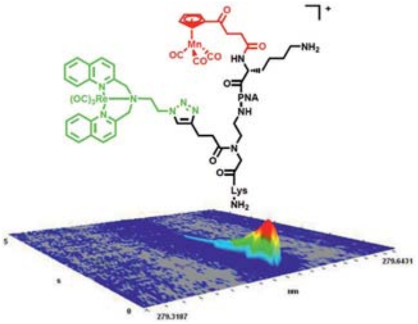
FULL PAPERS

Bioorganometallic Chemistry

G. Gasser,* S. Neumann, I. Ott, M. Seitz, R. Heumann, N. Metzler-Nolte* 5471–5478

Preparation and Biological Evaluation of Di-Hetero-Organometallic-Containing PNA Bioconjugates

Keywords: Bioorganometallic chemistry / Rhenium / Manganese / Biological activity / Peptide nucleic acids



The first two examples of di-hetero-organometallic-containing PNA oligomers have been prepared by the stepwise addition, on a solid support, of two different organometallic complexes to a single peptide nucleic acid oligomer. The products were characterized and their biological activity investigated.

Turn-On Fluorescent Probes

D. Maity, T. Govindaraju* 5479–5485

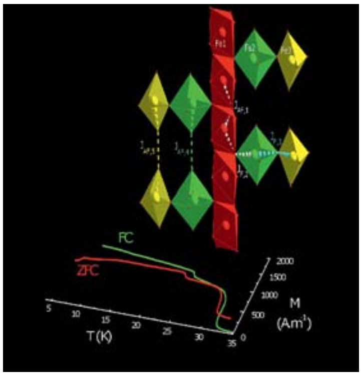
Naphthaldehyde–Urea/Thiourea Conjugates as Turn-On Fluorescent Probes for Al^{3+} Based on Restricted C=N Isomerization

Keywords: Hydrazones / Probes / Fluorescence / Aluminum / Isomerization

Two signal transduction mechanisms, namely, chelation-enhanced fluorescence and restricted C=N isomerization, have been exploited to design naphthaldehyde–carbonohydrazone (NC) and naphthaldehyde–thiocarbonohydrazone (NTC) Schiff base ligands as turn-on fluorescent chemosensors for aluminum(III) ions. Al^{3+} can be detected in the presence of most of the competing metal ions by using NC and NTC.

Ferrimagnetic Oxyphosphate

A new oxyphosphate, $PbFe_3O(PO_4)_3$, has been discovered and its structure has been characterized by single-crystal XRD. Direct-current (DC) magnetic susceptibility and specific heat measurements performed on single crystals revealed an unusual sequence of second-order ferromagnetic-like phase transitions. Alternating-current (AC) magnetic susceptibility measurements suggest glass-like dynamics.

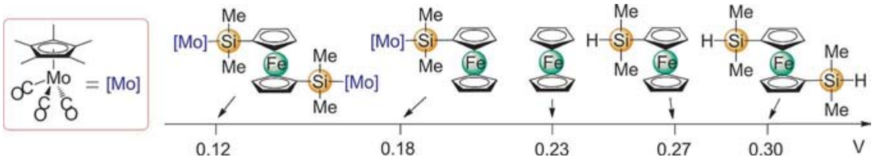


H. El Hafid, M. Velázquez,* O. Pérez, A. El Jazouli, A. Pautrat, R. Decourt, P. Veber, O. Viraphong, C. Delmas 5486–5495

Crystal Growth and Structure of the New Ferrimagnetic Oxyphosphate $PbFe_3O(PO_4)_3$

Keywords: Ferromagnetism / Magnetic properties / Phosphates / Phase transitions / Critical point phenomena

Silyl-Molybdenum Complexes



Demethanative Mo–Si bond formation was attained in the photoreaction of $[Cp^*Mo(CO)_3(Me)]$ with ferrocene, which had one or two dimethylsilyl group(s). The electrochemical properties of these complexes are explained by cyclic voltammetry.

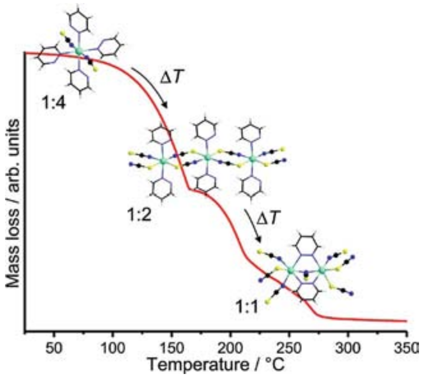
M. Itazaki, A. Ichimura, H. Nakazawa* 5496–5501

Synthesis of Silyl–Molybdenum Complexes Connected by a 1,1′-Metallocenylene Unit and Their Electrochemical Properties

Keywords: Molybdenum / Ferrocene / Si ligands / Structure elucidation / Cyclic voltammetry

Cd Coordination Compounds

The crystal structures and thermal degradation behaviour of new Cd^{II} thiocyanato and selenocyanato coordination compounds are reported. The latter act as structural models for their paramagnetic counterparts.



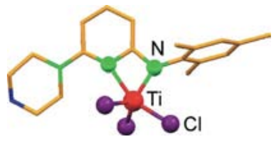
J. Boeckmann, I. Jeß, T. Reinert, C. Näther* 5502–5511

New Cd Thio- and Selenocyanato Coordination Compounds and Their Impact on the Structures and Reactivity of Their Paramagnetic Counterparts

Keywords: Cadmium / Selenium / N ligands / Magnetic properties / Thermochemistry

Aminopyridinates

Titanium complexes stabilized by bulky and electron-rich aminopyridinates were synthesized, structurally characterized, and investigated for use in ethylene and styrene polymerizations. The electron-donating ability by the ligand was increased by the introduction of a second amine group. The ligand can be made in a variety of forms, extending the list of available monoanionic bidentate nitrogen ligands.



M. Hafeez, W. P. Kretschmer, R. Kempe* 5512–5522

Titanium Complexes Stabilized by Bulky Electron-Rich Aminopyridinates and Their Application in Ethylene and Styrene Polymerization

Keywords: Polymerization / Titanium / Amido ligands / N ligands

CONTENTS

Phosphinous Acid Tautomerism

B. Kurscheid, W. Wiebe, B. Neumann, H.-G. Stammler, B. Hoge* 5523–5529

Investigations of the Tautomeric Equilibria between Phosphane Oxides and Their Corresponding Phosphinous Acids Bearing Electron-Withdrawing Perfluoroaryl Groups

Keywords: Phosphorus / Substitent effects / Tautomerism / Solvent effects

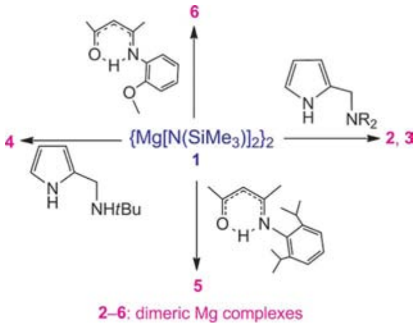
The solvent-dependent tautomeric equilibria between secondary phosphane oxides and their corresponding phosphinous acids bearing electron-withdrawing fluoroaryl groups is reported.

Magnesium Complexes

L.-F. Hsueh, N.-T. Chuang, C.-Y. Lee, A. Datta, J.-H. Huang,* T.-Y. Lee 5530–5537

Magnesium Complexes Containing η^1- and η^3-Pyrrolyl or Ketiminato Ligands: Synthesis, Structural Investigation and ε-Caprolactone Ring-Opening Polymerisation

Keywords: Magnesium / N ligands / Ring-opening polymerisation



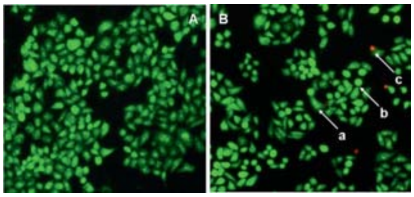
A series of dimeric magnesium derivatives containing substituted pyrrolyl or ketiminato ligands was synthesised and the compounds were evaluated as catalytic precursors. The complexes show moderate reactivity towards the ring opening polymerisation of ε-caprolactone in dichloromethane or tetrahydrofuran.

Bioinorganic Chemistry

H.-L. Huang, Z.-Z. Li, Z.-H. Liang, Y.-J. Liu* 5538–5547

Cell Cycle Arrest, Cytotoxicity, Apoptosis, DNA-Binding, Photocleavage, and Antioxidant Activity of Octahedral Ruthenium(II) Complexes

Keywords: Bioinorganic chemistry / Medicinal chemistry / Cytotoxicity / Apoptosis / Cell cycle / Ruthenium



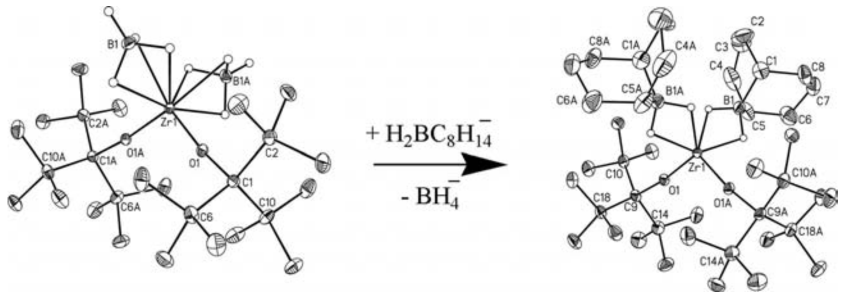
The synthesis, structure, DNA binding, cytotoxicity, apoptosis, cell cycle arrest, and antioxidant activity of ruthenium(II) complexes **1**, **2**, and **3** are reported. These complexes can effectively induce apoptosis of BEL-7402 cells. These results obtained from the cell cycle arrest indicated that the antiproliferative mechanism induced by complex **3** on MG-63 cells was G0/G1 phase arrest.

Organyloxozirconium Hydridoborates

J. Knizek, H. Nöth,* M. Schmidt-Amelunxen 5548–5557

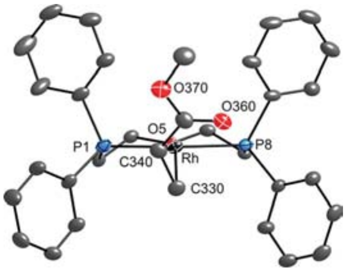
Triorganyl- and Diorganyloxozirconium Hydridoborates – Synthesis and Structures

Keywords: Organyloxozirconium hydridoborates / Zirconium / Borates / NMR spectroscopy / Structure elucidation



Compounds of the type [(RO)$_{4-n}$Zr(BH$_4$)$_n$] were obtained from the reaction of (RO)$_4$Zr (R = Bu, Et) with H$_3$B·THF or that of (RO)$_{4-n}$ZrCl*n* (*n* = 1, 2; R = *t*Bu$_3$C, *t*Bu$_3$Si) with LiBH$_4$. Boryl group exchange with H$_2$BC$_8$H$_{14}^-$ leads to (RO)$_4$Zr-(H$_2$BC$_8$H$_{14}$)$_n$ with agostic Zr–H–B bonding when *n* = 1, whereas a symmetric ZrH$_2$B compound results when *n* = 2.

A variety of Rh^I cations [Rh{(Ph$_2$PCH$_2$CH$_2$)$_2$E}(alkene)]$^+$ (E = PPh, S, O; alkene = methyl acrylate and trimethylvinylsilane) have been prepared and their fluxional behaviour investigated by variable-temperature NMR spectroscopy.



**S. D. Pike, R. J. Pawley,
A. B. Chaplin, A. L. Thompson,
J. A. Hooper, M. C. Willis,
A. S. Weller*** **5558–5565**

Exploring (Ph$_2$PCH$_2$CH$_2$)$_2$E Ligand Space (E = O, S, PPh) in Rh^I Alkene Complexes as Potential Hydroacylation Catalysts

Keywords: Rhodium / NMR spectroscopy / Phosphanes / Decarbonylation / Alkenes

---

* Author to whom correspondence should be addressed.

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

This article is available online free of charge (Open Access).

The editorial staff and the publishers thank all readers, authors, referees, and advertisers for their interest and support over the past year and wish them all a

Happy New Year.