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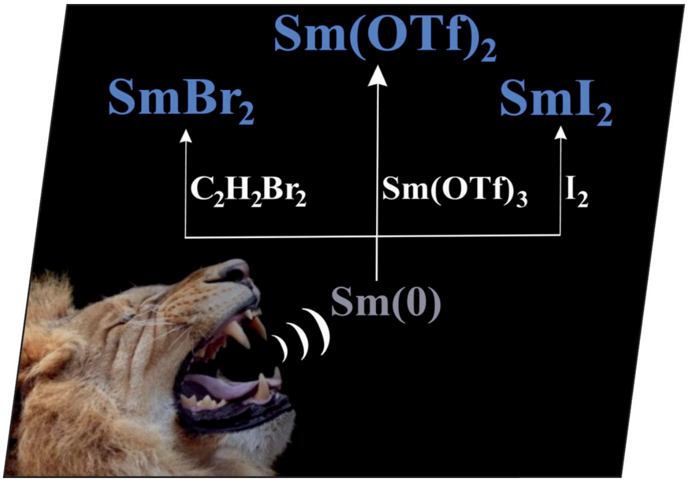
A union formed by chemical societies in Europe (ChemPubSoc Europe) has taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry*. Three further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

COVER PICTURE

The cover picture shows the sonochemical preparation of samarium diiodide, samarium dibromide, and samarium triflate. The use of high intensity ultrasound (20 kHz) provides a straightforward and rapid approach to the synthesis of Sm^{II} compounds, some of which are not accessible by other means. Of particular importance is the fact that this approach can be used to produce Sm^{II}-based reductants in a wide range of solvents, including alcohols. Details are discussed in the Short Communication by R. A. Flowers II et al. on p. 5015ff. R. A. F. gratefully acknowledges the National Science Foundation (CHE-0413845) for support of this work. Mr. Brian Casey is thanked for his assistance in the preparation of the cover.



CONTENTS

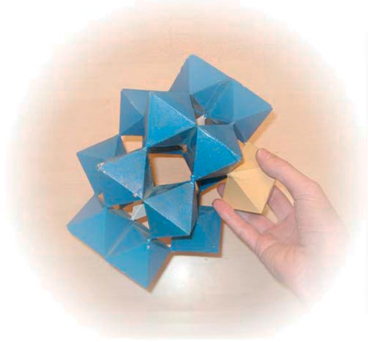
MICROREVIEW

Polyoxometalates and Chirality

B. Hasenknopf,* K. Micoine, E. Lacôte,* S. Thorimbert,* M. Malacria, R. Thouvenot **5001–5013**

Chirality in Polyoxometalate Chemistry

Keywords: Polyoxometalates / Chiral resolution / Organic–inorganic hybrid composites / Molecular recognition / Anions



Chirality of inorganic nanoclusters is a rising topic of intriguing complexity. The present review deals with the molecular aspects of chirality in polyoxometalate systems, from solid-state arrangements to organic hybrids. This expanding area is expected to play a growing role in catalysis, materials science, and biology of polyoxometalates.

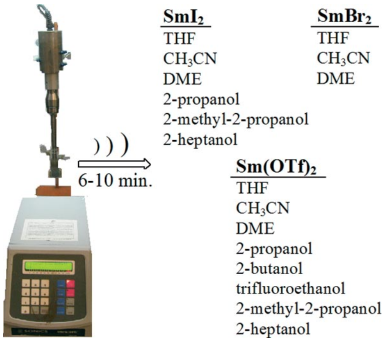
SHORT COMMUNICATIONS

Divalent Samarium

J. A. Teprovich Jr., P. K. S. Antharjanam, E. Prasad, E. N. Pesciotta, R. A. Flowers II* **5015–5019**

Generation of Sm^{II} Reductants Using High Intensity Ultrasound

Keywords: Samarium / Ultrasound / Synthesis



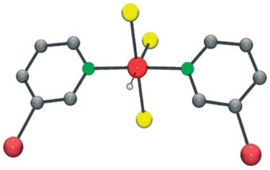
Ultrasound (20 kHz) was used to prepare samarium(II) diiodide (SmI_2), samarium(II) dibromide ($SmBr_2$), and samarium(II) triflate [$Sm(OTf_2)$] in a range of solvents including alcohols. The method described herein provides a straightforward and rapid approach to the synthesis of Sm^{II} compounds in solvents not accessible by other means.

Hypercoordinated Si Compounds

G. W. Fester, J. Wagler, E. Brendler, E. Kroke* **5020–5023**

Stable Trichlorosilan–Pyridine Adducts

Keywords: Trichlorosilane / Hypercoordination / Solid-state NMR / Dismutation



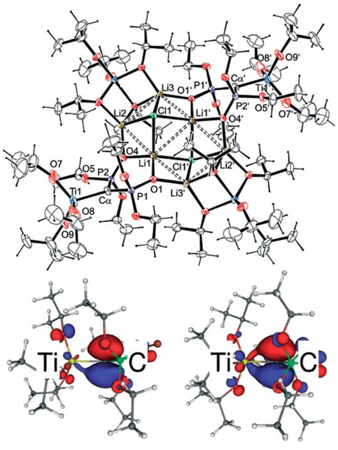
Solid-state pyridine adducts of $HSiCl_3$ are surprisingly stable. They can easily be obtained in high yields. Their dismutation occurs only in polar solvents at elevated temperatures.

Design of Carbene-Like Complexes

M. Spichty,* K. J. Kulicke, M. Neuburger, S. Schaffner, J. F. K. Mueller* **5024–5028**

Heterobimetallic Bisphosphonate Titanium Complexes: Carbene-Like Carbanions?

Keywords: Carbene / Titanium / Bisphosphonate / Density functional theory (DFT) / Natural bond orbital (NBO) analysis

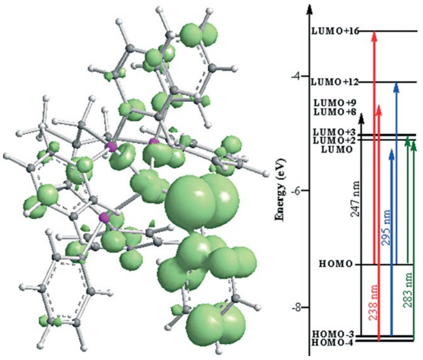


Dilithiation of a bisphosphonate and subsequent transmetallation leads to a titanium-metallated carbanion with a slight carbene character (10%). The properties of the carbene-like carbanion lie in between existing dilithiated compounds and carbene complexes.

FULL PAPERS

Mixed-Ligand Cu Complexes

Mixed-ligand complexes of the formula [Cu(κ^3-triphos)(thiolate)] were synthesized. The molecular structures of [Cu(κ^3-triphos)(κ^1-py2S)]·C_2H_5OH and [Cu(κ^3-triphos)(κ^1-pymt)] feature a rigid distorted tetrahedral copper(I) center with the phosphane acting in a tridentate chelating fashion. The complexes are strongly luminescent in solution and in the solid state. A theoretical study (TD-DFT calculations) of the spectroscopic properties of these complexes was performed.



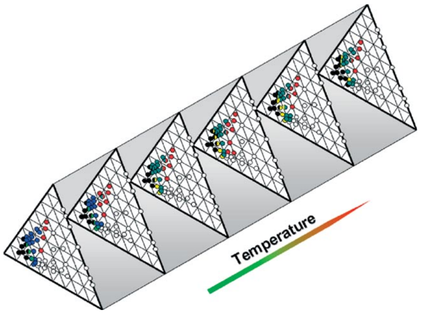
P. Aslanidis,* P. J. Cox,
K. Kapetangiannis,
A. C. Tsipis* **5029–5037**

Structural and Spectroscopic Properties of New Copper(I) Complexes with 1,1,1-Tris(diphenylphosphanylmethyl)ethane and Heterocyclic Thiolates

Keywords: Copper(I) complexes / Triphos / Heterocyclic thiolates / Luminescence / TD-DFT calculations

Metal Phosphonatosulfonates

Six new inorganic–organic hybrid compounds based on 2-phosphonoethanesulfonic acid and Cu^{II} ions were obtained under hydrothermal reaction conditions. For the systematic investigation of the system $Cu(NO_3)_2/H_2O_3P-CH_2CH_2-SO_3H/NaOH/$temperature our high-throughput methodology was employed. Because of the large amount of data, temperature- and pH-dependent trends can be extracted from these experiments.

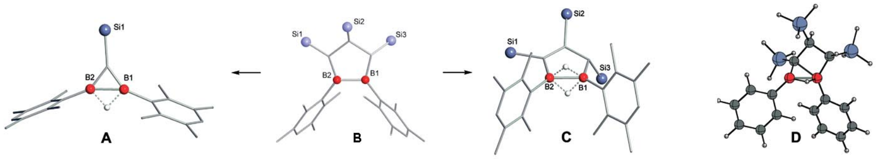


A. Sonnauer, N. Stock* **5038–5045**

Complex Hydrothermal Reaction Systems: A Systematic Investigation of Copper Phosphonatoethanesulfonates by High-Throughput Methods

Keywords: Metal phosphonatosulfonates / Inorganic-organic hybrid compounds / High-throughput methodology

Boron Heterocycles



Formation of **A** and **C** upon melting of **B** can be rationalized by invoking a common intermediate. Computations for model compounds like **D** by using the B3LYP/6-311+G** level of theory support this argumentation.

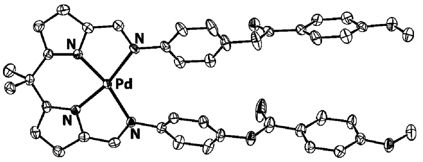
C. Präsang, Y. Sahin, M. Hofmann,
G. Geiseler, W. Massa,
A. Berndt* **5046–5055**

1,2-Diboracyclopentanes without Strong Donor Substituents: Synthesis, Reactions, and Computational Analysis

Keywords: Ab initio computations / Boron / Kinetically preferred reactions / Rearrangements

Helical Metallomesogens

Smectic phases are observed for the neutral double-stranded helical tetracatenar complex **[$Zn_2(2^{16})_2$]** and for the extended dicatenar complex **[Pd(3^{16})]**.



K. A. Ames, S. R. Collinson, A. J. Blake,
C. Wilson, J. B. Love, D. W. Bruce,
B. Donnio, D. Guillon,
M. Schröder* **5056–5066**

Design of Neutral Metallomesogens from 5,5-Dimethyldipyrromethane: Metal Ion Mediated Control of Folding and Hairpin Structures

Keywords: Metallomesogens / Liquid crystals / Helical structures / Coordination chemistry / Supramolecular chemistry / Zinc / Palladium / Pyrromethane / Dipyrrolide

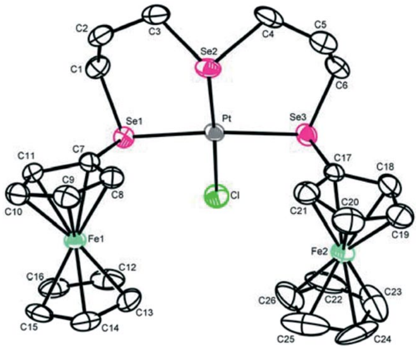
CONTENTS

Tridentate Se and Te Ligands

S. Jing, C. P. Morley,* C. A. Webster,
M. Di Vaira 5067–5075

Synthesis, Characterisation, Complexation and Electrochemistry of Linear Tridentate $FcE(CH_2)_3E'(CH_2)_3EFc$ (E, E′ = Se or Te) Ligands: X-ray Crystal Structures of $FcSe(CH_2)_3Se(CH_2)_3SeFc$ and $[PtCl\{FcSe(CH_2)_3Se(CH_2)_3SeFc\}]PF_6$ {Fc = $[Fe(\eta^5\text{-}C_5H_5)(\eta^5\text{-}C_5H_4)]$}

Keywords: Palladium / Platinum / Selenium / Tellurium / Ferrocene / Cyclic voltammetry



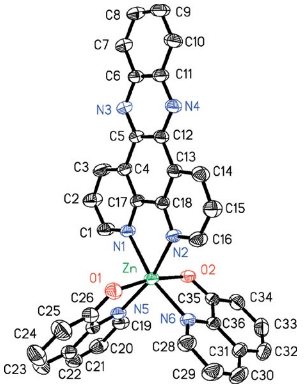
A series of linear tridentate ligands, $FcE(CH_2)_3E'(CH_2)_3EFc$ (E, E′ = Se or Te), and their chloropalladium(II) and chloroplatinum(II) complexes were prepared and characterised. In an electrochemistry study of the complexes no communication between the ferrocenyl centres was observed, regardless of the through-bond Fe···Fe distance.

OLED Materials

F. Yue, A.-X. Zhu, S.-L. Zheng,*
X.-M. Chen* 5076–5081

Ligation of Bipyridyl Ligands to Metal 8-Hydroxyquinolinates – Synthesis, Crystal Structures, and TDDFT Study

Keywords: Bipyridyl ligands / Metal 8-hydroxyquinolinates / Interfaces / TDDFT / X-ray diffraction



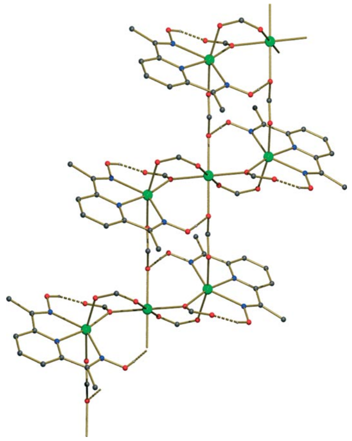
Incorporation of bipyridyl ligands with Cdq_2/Znq_2 (q = 8-hydroxyquinoline) gave four neutral, monomeric mixed-ligand compounds to serve as models for investigating the interfacial effect at the electron-transfer layer/light-emitting layer junction in OLEDs. The formation of these compounds is favorable to energy transition on the contact surface.

Pyridyldioximato Ligands

A. Escuer,* B. Cordero, X. Solans,
M. Font-Bardia, T. Calvet 5082–5087

Manganese(II) Trimeric Systems Derived from Pyridyldioximato Ligands: Synthesis, Crystal Structure, and Magnetic Characterization

Keywords: Manganese / Oximato ligands / Magnetic properties / Carboxylato bridges / Structural determination



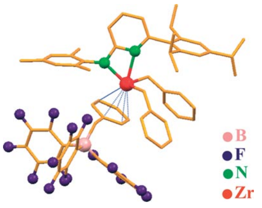
We report the reactivity of 2,6-diacetylpyridine dioxime ($dapdoH_2$) with several Mn^{II} carboxylates. It has been found that, depending on the nature of the R group (H, Me, Ph), the resulting compounds were obtained as discrete units or 1D systems.

Polymerisation Catalysis

A. Noor, W. P. Kretschmer, G. Glatz,
A. Meetsma, R. Kempe* 5088–5098

Synthesis and Structure of Zirconium and Hafnium Polymerisation Catalysts Stabilised by Very Bulky Aminopyridinato Ligands

Keywords: Aminopyridinato ligands / N ligands / Hafnium / Zirconium / Zwitterionic complexes / Ethylene polymerisation / Copolymerisation



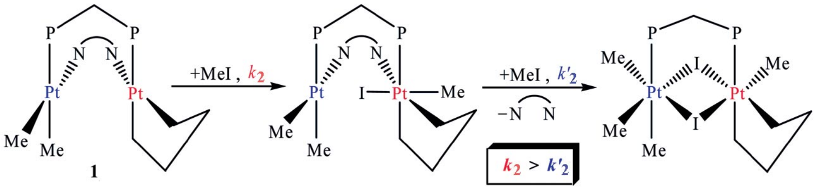
Mono(aminopyridinato) tribenzyl complexes form zwitterionic complexes if activated with $B(C_6F_5)_3$ which polymerise ethylene only at elevated temperatures. Activation with ammonium borate instead leads to active ethylene polymerisation catalysts. Homopolymerisation of propylene was not observed. A rather high selectivity for propylene including alternating ethylene–propylene units was observed in the presence of both monomers.

Solvent Effects

S. J. Hoseini, S. M. Nabavizadeh, S. Jamali, M. Rashidi* 5099–5105

Uncommon Solvent Effect in Oxidative Addition of MeI to a New Dinuclear Platinum Complex Containing a Platina(II)-cyclopentane Moiety

Keywords: Kinetics / Platinacyclopentane / Platinum / Solvent effects



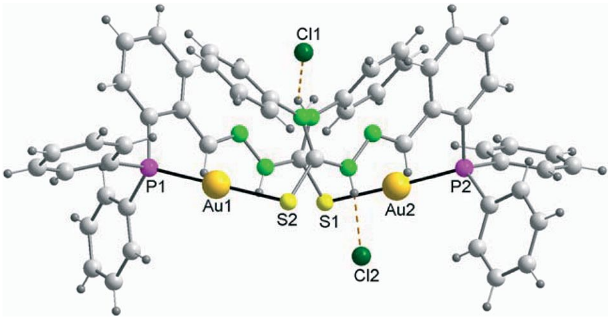
Reaction of complex *cis,cis*-$[Me_2Pt^a(\mu\text{-}dppm)(\mu\text{-}SMe_2)Pt^b{-}CH_2(CH_2)_2C^cH_2(Pt^b{-}C^c)]$ [dppm = bis(diphenylphosphanyl)methane] with phthalazine (NN) gave complex $[Me_3Pt^a(\mu\text{-}dppm)(\mu\text{-}I)_2Pt^b\{CH_2(CH_2)_2C^cH_2(Pt^b{-}C^c)\}Me]$ (**1**). Kinetic studies of the two-step addition of MeI to complex **1** in different solvents (acetone, CH_2Cl_2 and benzene) showed an uncommon solvent effect.

Gold(I) Thiosemicarbazone Complexes

A. Castiñeiras, R. Pedrido,* G. Pérez-Alonso 5106–5111

A Convenient Mode to Stabilize M^I Metal Ions by Using Thiosemicarbazones

Keywords: Thiosemicarbazone ligands / Gold / Luminescence / Heterocycles



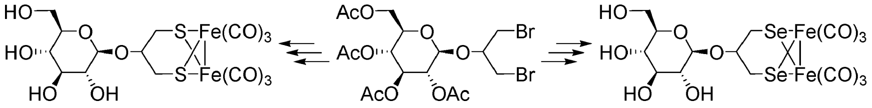
A phosphanylthiosemicarbazone ligand provides a suitable mode to easily stabilize monovalent Cu^I, Ag^I and Au^I complexes. Moreover, the gold(I) complex reported herein is the unique example of a gold(I) complex exclusively derived from a thiosemicarbazone ligand.

[Fe-only] Hydrogenases

U.-P. Apfel, Y. Halpin, M. Gottschaldt,* H. Görls, J. G. Vos,* W. Weigand* 5112–5118

Functionalized Sugars as Ligands towards Water-Soluble [Fe-only] Hydrogenase Models

Keywords: Sulfur / Selenium / Iron / Hydrogenases / Glucose



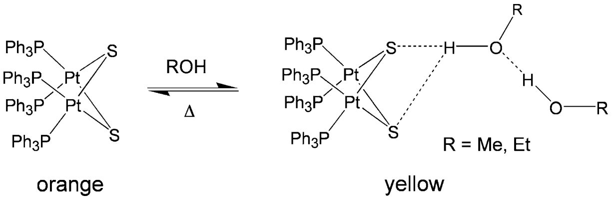
Inspired by the properties of sugar complexes, we synthesized water-soluble models for [Fe-only] hydrogenase by modifying the S-to-S linker. The introduction of sulfur or selenium as bridgehead atoms into the sugar residue allowed direct comparison of the two compounds.

Sulfide Hydrogen-Bonding

W. Henderson,* S. Thwaite, B. K. Nicholson, T. S. A. Hor .. 5119–5124

Hydrogen Bonding in Crystalline Alcohol Solvates of the Platinum(II) Sulfido Complex $[Pt_2(\mu\text{-}S)_2(PPh_3)_4]$

Keywords: Platinum complexes / Sulfide complexes / Hydrogen bonding



The platinum(II) sulfido complex $[Pt_2(\mu\text{-}S)_2(PPh_3)_4]$ reversibly forms yellow hydrogen-bonded solvates with lower alcohols. X-ray crystal structures of the solvates could be obtained. Essentially a type of "intermediate" could be trapped on the protonation reaction coordinate.

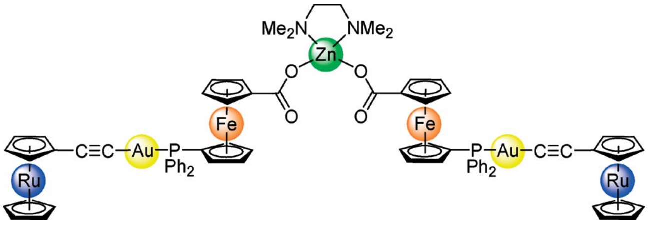
CONTENTS

Heterometallic Complexes

J. Kühnert, P. Ecorchard,
H. Lang* 5125–5137

Heterometallic Transition-Metal Complexes Based on 1-Carboxy-1′-(diphenylphosphanyl)ferrocene, (tmeda/pmdta)-Zinc(II), and Gold(I) Units

Keywords: Heteromultimetallic complexes / Transition metals / Acetylides / Ferrocene / Cyclic voltammetry



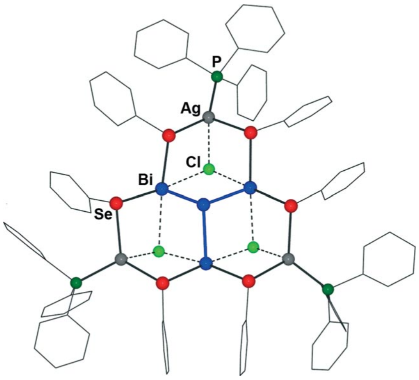
The synthesis, characterization, and electrochemical behavior of heterobi- to heterotetrametallic transition-metal complexes based on zinc(II) and titanium(IV) carboxylates of dpf [dpf = $(\eta^5\text{-}C_5H_4CO_2)(\eta^5\text{-}C_5H_4PPh_2)Fe$] are described. The solid-state structures of four compounds and cyclic voltammetric studies on eight complexes are reported.

Metal Chalcogenolate Complexes

H. Sommer, A. Eichhöfer, N. Drebov,
R. Ahlrichs,* D. Fenske* 5138–5145

Preparation, Geometric and Electronic Structures of $[Bi_2Cu_4(SPh)_8(PPh_3)_4]$ with a Bi_2 Dumbbell, $[Bi_4Ag_3(SePh)_6Cl_3(PPh_3)_3]_2$ and $[Bi_4Ag_3(SePh)_6X_3(PPh\textit{i}Pr_2)_3]_2$ (X = Cl, Br) with a Bi_4 Unit

Keywords: Bismuth / Cluster compounds / Copper / Density functional calculations / Silver



We describe preparations, structures and results of DFT treatments of new bismuth/transition metal chalcogenolate cluster complexes, with a Bi_2 unit in $[Bi_2Cu_4(SPh)_8(PPh_3)_4]$ and Bi_4 units in $[Bi_4Ag_3(SePh)_6X(PR_3)_3]_2$ (X = Cl, Br, R = organic group).

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* Author to whom correspondence should be addressed.

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