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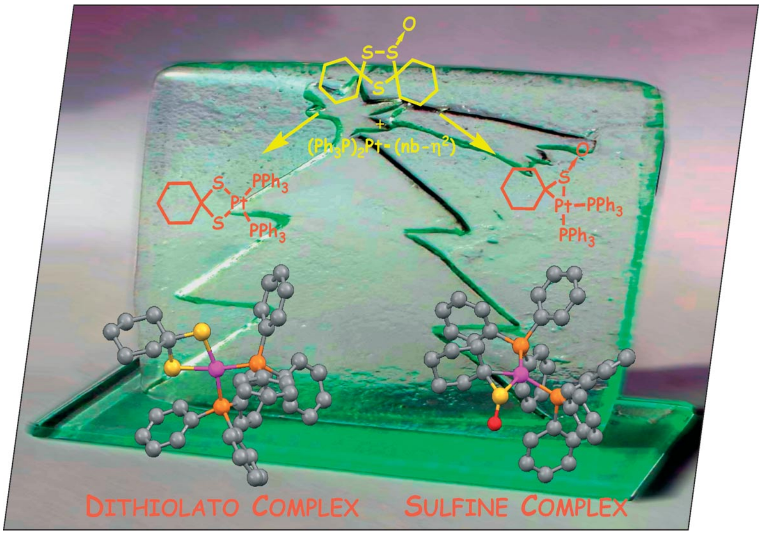
EUChemSoc

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 insertion of a Pt^0 complex fragment into the S–S bond of a 1,2,4-trithiolane 1-*S*-oxide. Reactions of Pt^0 complexes with small sulfur-containing heterocycles have become more and more popular in order to generate and stabilize reactive sulfur-containing species. The reaction presented leads to three- and four-membered platinacycles by ring contraction with expulsion of the reactive thiocarbonyl derivatives. The postulated mechanism for the fragmentation of 1,2,4-trithiolane 1-*S*-oxide, as well as the molecular structures, give a reasonable explanation for the observed selectivity. Details are discussed in the article by W. Weigand, G. Mloston et al. on p. 5627 ff. We thank Dr. Jaroslaw Romanski for decorating our Christmas tree (background) for this year and designing the cover picture.



CONTENTS

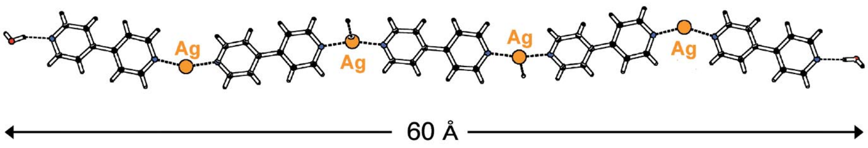
SHORT COMMUNICATION

Silver Coordination Oligomer

Y. Wang, U. Englert* 5623–5625

The First Linear Coordination Oligomer Linked by 4,4′-Bipyridine

Keywords: Coordination polymers / Chain structures / Polycations / Oligomers / X-ray diffraction



Quite long, but no polymers yet! Coordination oligomers $[Ag_4(bipy)_5]^{4+}$ and $[Ag_2(bipy)_3]^{2+}$ were trapped in the same salt. A change in the counteranion was sufficient to induce polymerization.

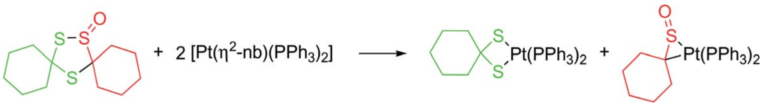
FULL PAPERS

Pt Chemistry

H. Petzold, S. Bräutigam, H. Görls,
W. Weigand,* J. Romanski,
G. Mloston* 5627–5632

Oxidation of Spirocyclohexyl-1,2,4-trithiolane and Complexation Reaction with $[Pt(\eta^2\text{-nb})(PPh_3)_2]$

Keywords: Insertion reactions / 1,2,4-Trithiolanes / Platinum / S ligands / Thioketone complexes



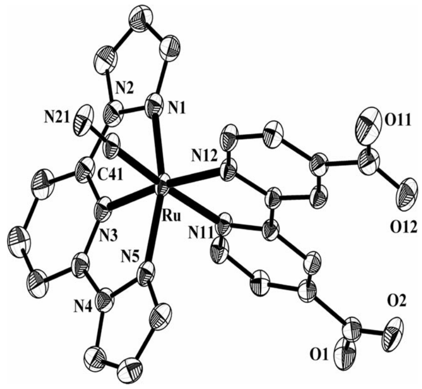
Insertion of a Pt^0 complex fragment into the S–S bond of a 1,2,4-trithiolane as well as into that of its 1-*S* and 4-*S*-oxide is presented. Subsequent ring contraction with expulsion of reactive thiocarbonyl derivatives leads to three- and four-membered platinacycles that include thiolato and sulfenato structures. The postulated mechanism and the molecular structures give a reasonable explanation for the observed selectivity.

Heteroleptic Ruthenium(II) Complexes

A. I. Philippopoulos,* A. Terzis,
C. P. Raptopoulou, V. J. Catalano,
P. Falaras 5633–5644

Synthesis, Characterization, and Sensitizing Properties of Heteroleptic Ru^{II} Complexes Based on 2,6-Bis(1-pyrazolyl)pyridine and 2,2′-Bipyridine-4,4′-dicarboxylic Acid Ligands

Keywords: 2,6-Bis(1-pyrazolyl)pyridine / Heteroleptic Ru^{II} complexes / Dye-sensitized solar cells / Ruthenium / Protonation



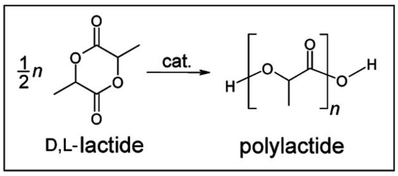
The synthesis and characterization of a series of novel heteroleptic ruthenium(II) complexes bearing the 2,6-bis(1-pyrazolyl)pyridine (bpp) and 2,2′-bipyridine-4,4′-dicarboxylic acid ($dcbpyH_2$) ligands, as well as their performance as dye sensitizers in nanocrystalline solar cells for the conversion of visible light into electricity, is presented. These complexes efficiently sensitize nanostructured TiO_2 films and the resulting photoelectrodes incorporated in solid-state DSSCs show enhanced overall power conversion efficiency, which strongly depends on their molecular structure and their degree of protonation.

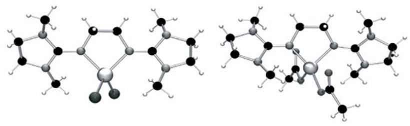
(Guanidine)zinc Catalysts

J. Börner, S. Herres-Pawlis,* U. Flörke,
K. Huber 5645–5651

[Bis(guanidine)]zinc Complexes and Their Application in Lactide Polymerisation

Keywords: Guanidine / D,L-Lactide / N ligands / Ring-opening polymerization / Zinc

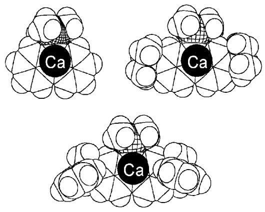




The first examples of aliphatic [bis(guanidine)]zinc complexes $[Zn(DMEG_2e)Cl_2]$, $[Zn(DMEG_2e)(CH_3COO)_2]$ and $[Zn(DMEG_2e)_2](CF_3SO_3)_2$ containing N^1,N^2-bis(1,3-dimethylimidazolidin-2-ylidene)ethane-1,2-diamine have been synthesised and fully characterised. These compounds are able to catalyse the polymerisation of D,L-lactide. PLAs with molecular weights (M_w) up to 59000 g/mol could be obtained.

Ca-Mediated Styrene Polymerization

Increase of the steric bulk in the 2- and 7-positions of the fluorenyl ligands in several new organocalcium initiators led to a considerable improvement in the stereoselectivity for styrene polymerization. Syntheses, structures and polymerization results are discussed.

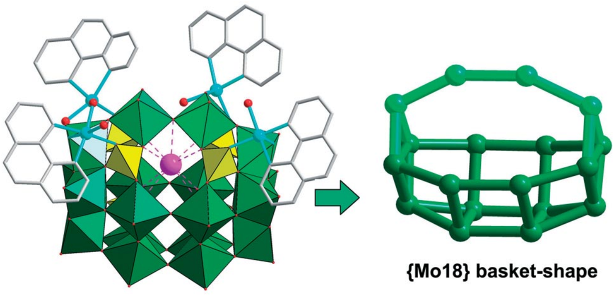


D. F.-J. Piesik, K. Häbe,
S. Harder* **5652–5661**

Ca-Mediated Styrene Polymerization: Tacticity Control by Ligand Design

Keywords: Alkaline-earth metals / Calcium / Polymerization catalysis / Fluorene ligands / Polystyrene

Modified Polyoxoanions



A basket-like mixed-valent polyoxoanion $[Sr\subset P_6Mo_4{}^{V}Mo_{14}{}^{VI}O_{73}]^{10-}$ modified with $\{Cu(phen)(H_2O)_x\}$ (x = 1–3) fragments was hydrothermally synthesized and structurally characterized. The compound shows good electrocatalytic activity to reduce hydrogen peroxide.

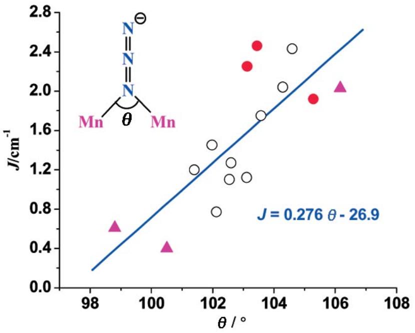
K. Yu, Y.-G. Li,* B.-B. Zhou,* Z.-H. Su,
Z.-F. Zhao, Y.-N. Zhang **5662–5669**

A Basket-Like $[Sr\subset P_6Mo^{V}{}_4Mo^{VI}{}_{14}O_{73}]^{10-}$ Polyoxoanion Modified with $\{Cu(phen)(H_2O)_x\}$ (x = 1–3) Fragments: Synthesis, Structure, Magnetic, and Electrochemical Properties

Keywords: Polyoxometalate / Organic–inorganic hybrid / Basket-like / Electrocatalysis

Magnetostructural Correlation

Three end-on azido dinuclear Mn^{II} complexes based on tripyridyl ligands show intramolecular ferromagnetic superexchange. Clearer magnetostructural correlation for end-on azido-bridged Mn^{II} complexes was obtained.

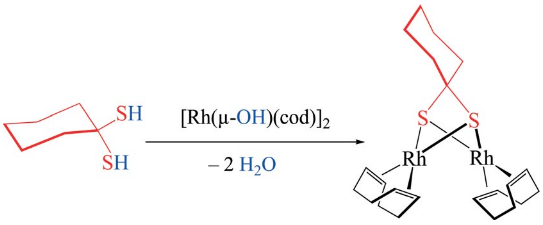


M.-M. Yu, Z.-H. Ni, C.-C. Zhao,
A.-L. Cui, H.-Z. Kou* **5670–5676**

Synthesis and Magnetic Study of $\mu_{1,1}$-Azido-Bridged Dinuclear Manganese(II) Complexes Based on Tripyridyl Ligands

Keywords: Manganese / Dinuclear complexes / Crystal structures / Magnetic properties / Azido bridge

Dimetallic Hydroformylation Catalysts



The *gem*-dithiolato-bridged dinuclear compound $[Rh_2(\mu\text{-}S_2Chxn)(cod)_2]$ was obtained in a straightforward manner from 1,1-dimercaptocyclohexane and $[Rh(\mu\text{-}OH)(cod)]_2$. This compound is an efficient catalyst precursor in the presence of P-donor ligands for the hydroformylation of oct-1-ene under mild conditions. The *trans*-dinuclear species $[Rh_2(\mu\text{-}S_2Chxn)(CO)_2(PPh_3)_2]$ was isolated from the catalytic solutions

M. A. F. Hernandez-Gruel,
G. Gracia-Arruego, A. B. Rivas,
I. T. Dobrinovitch, F. J. Lahoz,
A. J. Pardey, L. A. Oro,*
J. J. Pérez-Torrente* **5677–5683**

Novel *gem*-Dithiolato-Bridged Rhodium Hydroformylation Catalysts: Bridging the Gap in Dinuclear Rhodium Thiolate Chemistry

Keywords: Homogeneous catalysis / Hydroformylation / Dinuclear complexes / *gem*-Dithiolato ligands / Rhodium

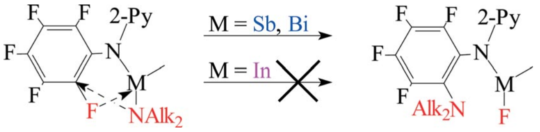
CONTENTS

Fluoride/Amide Exchange

P. L. Shutov, S. S. Karlov,* K. Harms,
M. V. Zabalov, J. Sundermeyer,*
J. Lorberth, G. S. Zaitseva .... 5684−5692

ortho-Directed Metathetical Fluoride/Amide Exchange in (Pentafluorophenyl)amides

Keywords: Fluorinated ligands / Amides / Nucleophilic substitution / Density functional calculations



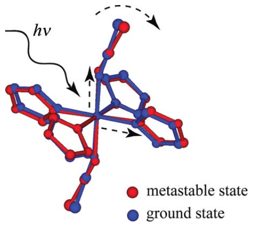
Metathetical fluoride/amide exchange has been examined in pentafluoro(2-pyridyl)anilides of Sb, Bi, and In by synthetic and X-ray studies and density functional calculations. The tendency for this rearrangement increases with an increase of the covalent radius and decreases with an increase of the coordination number of the central atom.

The Spin-Crossover Metastable State

V. Legrand, S. Pillet, C. Carbonera,
M. Souhassou, J.-F. Létard,
P. Guionneau, C. Lecomte* .... 5693−5706

Optical, Magnetic and Structural Properties of the Spin-Crossover Complex $[Fe(btr)(NCS)]\cdot HO$ in the Light-Induced and Thermally Quenched Metastable States

Keywords: Iron(II) / Photoswitching / Structural analysis / Photomagnetism / Spin crossover



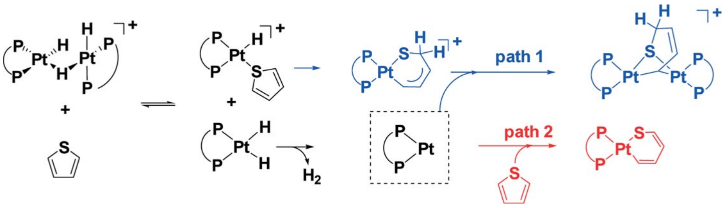
The light-induced and thermally induced structural reorganization of the spin-crossover complex $[Fe(btr)_2(NCS)_2]\cdot H_2O$ are discussed together with photomagnetic and optical reflectivity results.

Hydrodesulfurization (HDS)

A. Nova, F. Novio,
P. González-Duarte*, A. Lledós,*
R. Mas-Ballesté .... 5707−5719

C−S Bond Activation and Partial Hydrogenation of Thiophene by a Dinuclear Trihydride Platinum Complex

Keywords: C−S activation / Desulfurization / Thiophene / Hydride ligands / Platinum / Reaction mechanisms



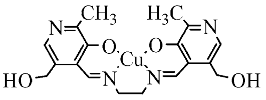
Hydrodesulfurization reactions with transition metals: the reaction of $[(dppp)_2Pt_2H_3]ClO_4$ with thiophene achieves activation of the C−S bond. The corresponding mechanism has been interpreted on the basis of DFT calculations. The reactivity of the complexes obtained in this reaction has led to the characterization of new platinum species.

Zeolite-Y-Encapsulated Complexes

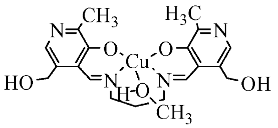
M. R. Maurya,* B. Singh, P. Adão,
F. Avecilla, J. Costa Pessoa ... 5720−5734

Zeolite-Encapsulated Copper(II) Complexes of Pyridoxal-Based Tetradentate Ligands for the Oxidation of Styrene, Cyclohexene and Methyl Phenyl Sulfide

Keywords: Zeolites / Copper(II) complexes / Heterogeneous catalysis / Oxidation reactions



[Cu(pydx-en)] (**1**)

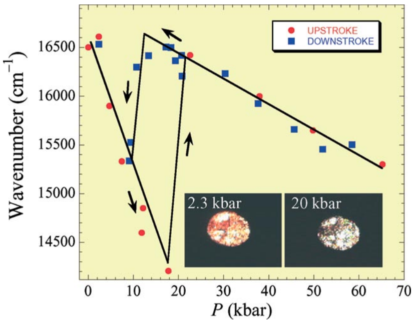


[Cu(pydx-1,3-pn)(MeOH)] (**2**)

[Cu(pydx-en)] (**1**) and [Cu(pydx-1,3-pn)(MeOH)] (**2**) have been encapsulated in the supercages of zeolite-Y and used as catalysts for the oxidation of styrene, cyclohexene and methyl phenyl sulfide.

Phase Transition in Pt(bpy)Cl_2

Luminescence of the red form of Pt(bpy)Cl_2 has been measured as a function of hydrostatic pressure. The band maximum is shifted by $-147\ cm^{-1}\,kbar^{-1}$. Strong discontinuities in the optical properties at 17.7 kbar were interpreted in terms of a crystallographic phase transition from the red to a denser yellow form of Pt(bpy)Cl_2. First-principles calculations based on density functional theory were used to study this transformation.



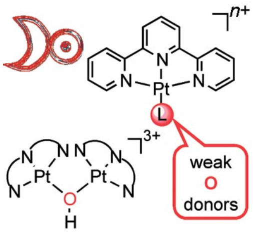
R. Valiente,* J. M. García-Lastra, P. García-Fernández, S. García-Revilla, O. S. Wenger **5735–5742**

Red-to-Yellow Pressure-Induced Phase Transition in Pt(bpy)Cl: Spectroscopic Study Supported by DFT Calculations

Keywords: Phase transition / High-pressure chemistry / DFT calculations / Platinum(II) / Metal–metal interactions

Platinum(II) Complexes with O-Donors

Acidolysis of the complexes [Pt(CH_3)(terpy)]Y (Y = PF_6, CH_3SO_3, CF_3SO_3, ClO_4, BF_4; terpy = 2,2′:6′,2′′-terpyridine) with CH_3SO_3 affords the corresponding methanesulfonato derivatives [Pt(OSO_2CH_3)(terpy)]Y. A mixture of the methanesulfonato and nitrato complexes is obtained when Y = NO_3, whereas the reaction of [Pt(CH_3)(terpy)](CF_3SO_3) with triflic acid gives the aqua species [Pt(terpy)(H_2O)](SO_3CF_3)$_2$. The new hydroxido-bridged dimers [Pt_2(μ-OH)(terpy)$_2$](X) [X = (ClO_4)$_3$, (PF_6)$_2$(CF_3SO_3)] are isolated and their X-ray crystal structures determined.



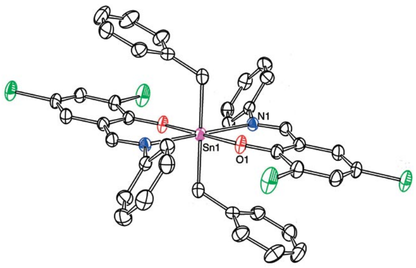
G. Annibale,* P. Bergamini, V. Bertolasi, M. Bortoluzzi, M. Cattabriga, B. Pitteri **5743–5751**

The Relative Coordinating Ability of Some Weak O-Donor Anions and Water Towards the $[Pt(terpy)]^{2+}$ (terpy = 2,2′:6′,2′′-terpyridine) Center – X-ray Crystal Structures of [Pt(terpy)(H_2O)](CF_3SO_3)$_2$ and [Pt_2(μ-OH)(terpy)$_2$](PF_6)$_2$(CF_3SO_3)

Keywords: Platinum / Bridging ligands / N ligands / O ligands

Octahedral Organotin Compounds

The compounds L_2SnR_2 [L = *N*-(3,5-dichlorosalicylidene)aniline; R = CH_3 (**1**), R = CH_2Ph (**2**)] and L'_2SnR_2 [**3**: L′ = *N*-(3-*tert*-butylsalicylidene)aniline, R = CH_2Ph] have been synthesized and characterized. The X-ray crystal structure of compound **2** showed an octahedral geometry with the alkyl groups in a *trans* relationship. Cationic species generated therefrom promoted ethylene oligomerization under mild conditions.



L. Annunziata, D. Pappalardo,* C. Tedesco, C. Pellecchia **5752–5759**

Octahedral Alkylbis(phenoxy-imine)tin(IV) Complexes: Effect of Substituents on the Geometry of the Complexes and Their Reactivity Toward Ionizing Species and Ethylene

Keywords: Tin / N,O ligands / Cations / Ethylene / Oligomerization

INDEX 2007 5763–5773

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.