



## Contents

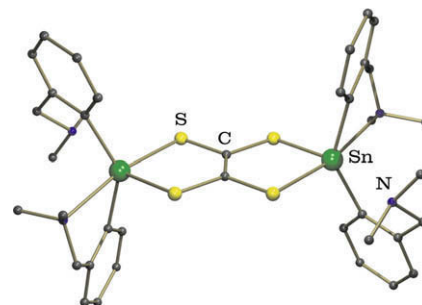
### Communication

Zdeňka Padělková, Ivana Císařová,  
Mikhail S. Nechaev, Aleš Růžicka

*J. Organomet. Chem.* 694 (2009) 2871

Reactivity of a C,N-chelated stannylene with chalcogens

Stannylene  $\{2-[(\text{CH}_3)_2\text{NCH}_2]\text{C}_6\text{H}_4\}_2\text{Sn}$  was reacted with oxygen, sulfur, selenium, tellurium, and carbon disulfide. Dinuclear adducts including  $\{2-[(\text{CH}_3)_2\text{NCH}_2]\text{C}_6\text{H}_4\}_2\text{Sn}\}_2(\mu^2\text{-S}_2\text{C}=\text{CS}_2)$  as product of reaction with  $\text{CS}_2$  were isolated and characterized.



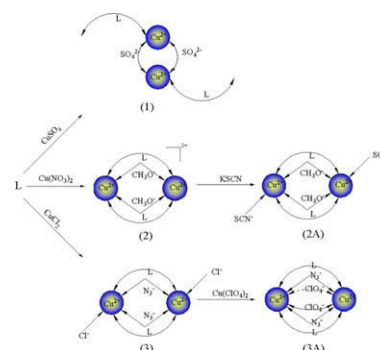
### Regular Papers

Yaru Liu, Jinpeng Li, Hongwei Hou,  
Yaoting Fan

*J. Organomet. Chem.* 694 (2009) 2875

Subtle role of counteranions in molecular construction: Structures and properties of novel Cu(II) coordination complexes with bis-(1-benzimidazolymethylene)-(2,5-thiadiazoly)-disulfide

Five Cu(II) complexes are synthesized by two self-assembly methods, the direct self-assembly of the metal and ligand, and the anion exchange reaction of precursor complex. Of the five complexes, selecting four having similar structural skeletons as catalysts, the catalysis process of the oxidative coupling of DMP has been explored.

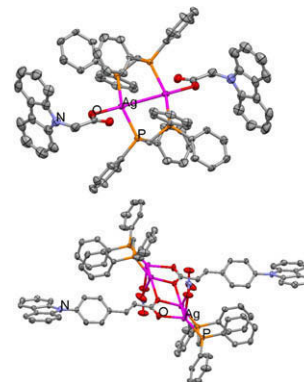


Banfeng Ruan, Yupeng Tian,  
Hongping Zhou, Jieying Wu, Zhaodi Liu,  
Chenhao Zhu, Jiayang Yang,  
Hailiang Zhu

*J. Organomet. Chem.* 694 (2009) 2883

Synthesis, crystal structure and *in vitro* antibacterial activity of two novel silver(I) complexes

The antibacterial activity of two novel silver(I) complexes has been studied against two Gram-positive and two Gram-negative bacterial strains by MTT method, observing that complex **2** shows powerful antibacterial activity against *Bacillus subtilis* ATCC 6633 with MIC of 0.78  $\mu\text{g}/\text{mL}$ , which was superior to the positive control penicillin G.

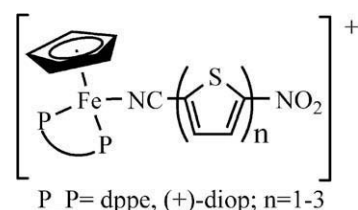


**M. Helena Garcia, Paulo J. Mendes, M. Paula Robalo, M. Teresa Duarte, Nelson Lopes**

*J. Organomet. Chem.* 694 (2009) 2888

Synthesis and electrochemical studies of  $\eta^5$ -monocyclopentadienylruthenium(II) complexes with substituted thiophene nitrile ligands. Crystal structure of  $[\text{Ru}(\eta^5\text{-C}_5\text{H}_5)(\text{dppe})(\text{NC}\{\text{SC}_4\text{H}_2\}_2\text{NO}_2)][\text{PF}_6]$

New organometallic complexes  $[\text{Ru}(\eta^5\text{-C}_5\text{H}_5)(\text{P}_2\text{P})(\text{NC}\{\text{SC}_4\text{H}_2\}_n\text{NO}_2)][\text{PF}_6]$  ( $\text{P}_2\text{P}$  = dppe, (+)-diop;  $n = 1\text{--}3$ ) were prepared and fully characterized. Spectroscopic, electrochemical and crystallographic data were used in order to get an insight on the first hyperpolarizabilities of these complexes when compared to those found in parent compounds reported in the literature.

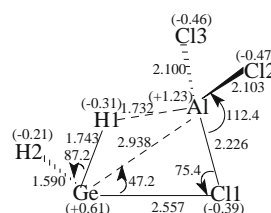


**Wen-Zuo Li, Jian-Bo Cheng, Qing-Zhong Li, Bao-An Gong, Jia-Zhong Sun**

*J. Organomet. Chem.* 694 (2009) 2898

Theoretical investigation on structures and isomerizations of the aluminum chlorogermolenoid  $\text{H}_2\text{GeClAlCl}_2$

The aluminum chlorogermolenoid  $\text{H}_2\text{GeClAlCl}_2$  was studied for the first time by using the DFT B3LYP and QCISD methods in gas phase and four solvents.

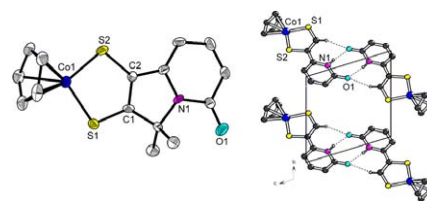


**Mitsushiro Nomura, Mami Kanamori, Yoshino Yamaguchi, Naoki Tateno, Chikako Fujita-Takayama, Toru Sugiyama, Masatsugu Kajitani**

*J. Organomet. Chem.* 694 (2009) 2902

Hydrogen bonding interaction of  $\text{CpCo}(\text{dithiolene})$  complex with monocyclic 2-pyridonyl substituent and unexpected formation of dithiolene-fused tricyclic pyridone derivative

$[\text{CoCp}(\text{dithiolene})]$  complexes having 2-pyridonyl group were obtained and their X-ray structure analyses indicated dithiolene-fused tricyclic pyridone structure and  $\text{NH}\cdots\text{O}$  and  $\text{CH}(\text{dithiolene})\cdots\text{O}$  hydrogen bondings. The tricyclic pyridone complex exhibited lower energy electronic absorption ( $\lambda_{\text{max}} = 668 \text{ nm}$ ) compared with the others ( $\lambda_{\text{max}} = 562\text{--}614 \text{ nm}$ ), due to an extended  $\pi$ -conjugation of aromatic cobaltadithiolene ring.

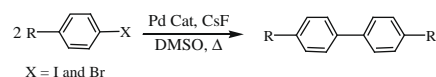


**Chenze Qi, Xudong Sun, Cuiyun Lu, Jinzhi Yang, Yijun Du, Huajiang Wu, Xian-Man Zhang**

*J. Organomet. Chem.* 694 (2009) 2912

Palladium catalyzed reductive homocoupling reactions of aromatic halides in dimethyl sulfoxide (DMSO) solution

Biaryls were obtained in good to excellent yields from the palladium catalyzed reductive homocoupling reactions of various aryl iodides and bromides in dimethyl sulfoxide (DMSO) solution without the need for any additional reducing reagents.

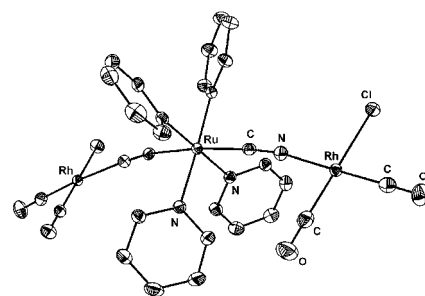


**Yu.S. Varshavsky, T.G. Cherkasova,  
M.R. Galding, V.N. Khrustalev,  
I.S. Podkorytov, V.A. Gindin,  
S.N. Smirnov, A.B. Nikol'skii**

*J. Organomet. Chem.* 694 (2009) 2917

Heterometallic cyanide-bridged complexes containing Rh<sup>I</sup>Ru<sup>II</sup>Rh<sup>I</sup> triad: NMR data on exchange reactions and ligand effect transmission

*Trans*-[RuPy<sub>4</sub>(CN)<sub>2</sub>] cleaves chloro-rhodium bridges in rhodium(I) binuclear complexes, [Rh(CO)<sub>2</sub>Cl]<sub>2</sub>, [Rh(Cod)Cl]<sub>2</sub>, and [(Cod)RhCl<sub>2</sub>Rh(CO)<sub>2</sub>] to form heterometallic triad complexes [L<sub>2</sub>ClRh(NC)RuPy<sub>4</sub>(CN)RhClL'<sub>2</sub>].

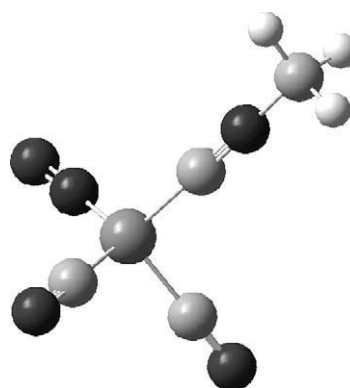


**Benedek Károlyi, Zsolt Gengeliczki,  
Gábor Vass, László Szepes**

*J. Organomet. Chem.* 694 (2009) 2923

Isonitrile ligand properties as studied by He I/He II photoelectron spectroscopy

New series of isonitrile-substituted cobalt tricarbonyl nitrosyl ((RNC)Co(CO)<sub>2</sub>(NO), R = Me, Et, *n*-Pr, *i*-Pr, *n*-Bu, *n*-Pe, (Me<sub>3</sub>Si)CH<sub>2</sub>) has been synthesized, and their ultraviolet photoelectron spectra are reported. The relative importance of electronic and steric effects of the isonitrile ligands, as a function of the size of group -R, is discussed.

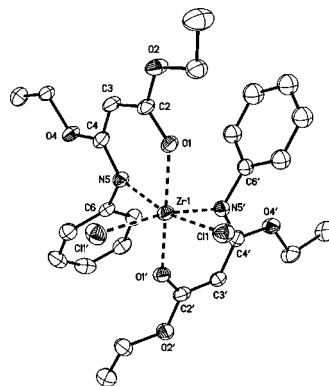


**Perti Elo, Antti Pärssinen, Martin Nieger,  
Markku Leskelä, Timo Repo**

*J. Organomet. Chem.* 694 (2009) 2927

Synthesis, ethylene polymerization and dynamic features of titanium and zirconium complexes bearing chelating malonate-based enaminoketonato ligands

Synthesis of new titanium and zirconium dichloro complexes bearing malonate-based enaminoketonato (N,O) ligands is described. After MAO activation complexes were used in ethylene polymerization and they produced bi- or multimodal polyethylenes.

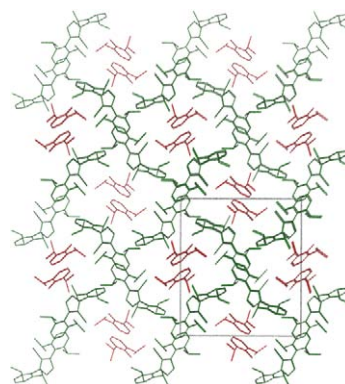


**Marcus L. Cole, Samantha K. Furfari,  
Marc Kloth**

*J. Organomet. Chem.* 694 (2009) 2934

N-heterocyclic carbene coordinated gallanes and chlorogallanes

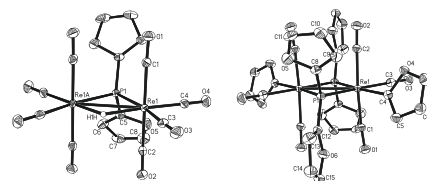
Four *N*-heterocyclic carbene coordinated gallanes and chlorogallanes are reported that represent some of the most thermally stable molecular gallium hydrides known. The remarkable thermal stabilities of these complexes translate to aerobic stability.



**Shishir Ghosh, Mansura Khatun,  
Daniel T. Haworth, Sergey V. Lindeman,  
Tasneem A. Siddiquee,  
Dennis W. Bennett, Graeme Hogarth,  
Ebbe Nordlander, Shariff E. Kabir**

*J. Organomet. Chem.* 694 (2009) 2941

Reactions of the dirhenium complexes  $[\text{Re}_2(\text{CO})_{10-x}(\text{NCMe})_x]$  ( $x = 0, 1, 2$ ) with tri(2-furyl)phosphine under different conditions are described. A series of dirhenium complexes are obtained bearing tri(2-furyl)phosphine, di(2-furyl)phosphide and bridging hydride ligands.



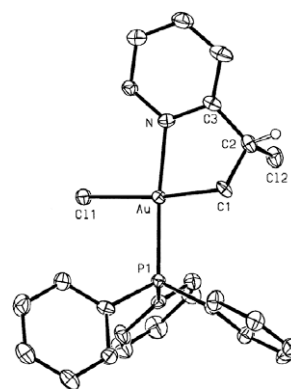
Activation of tri(2-furyl)phosphine at a dirhenium centre: Formation of phosphido-bridged dirhenium complexes

**Maria Agostina Cinellu, Fabio Cocco,  
Giovanni Minghetti, Sergio Stoccoro,  
Antonio Zucca, Mario Manassero**

*J. Organomet. Chem.* 694 (2009) 2949

Gold(III) adducts of 2-vinyl- and 2-ethylpyridine and cyclometallated derivatives of 2-vinylpyridine: Crystal structure of the cyclometallated derivative  $[\text{Au}(k^2\text{-C,N-CH}_2\text{CH}(\text{Cl})\text{-C}_5\text{H}_4\text{N})(\text{PPh}_3)\text{Cl}][\text{PF}_6]$

Thermal activation of the 2-vinylpyridine adduct  $\text{Au}(\text{vinpy})\text{Cl}_3$  in water gives the five-membered cycloaurated derivative  $[\text{Au}(k^2\text{-C,N-CH}_2\text{CH}(\text{Cl})\text{-C}_5\text{H}_4\text{N})\text{Cl}_2]$  formally resulting through a *trans* nucleophilic addition of a chloride onto the C=C bond. The  $\text{PPh}_3$  derivative  $[\text{Au}(k^2\text{-C,N-CH}_2\text{CH}(\text{Cl})\text{-C}_5\text{H}_4\text{N})(\text{PPh}_3)\text{Cl}][\text{PF}_6]$  has been structurally characterized.

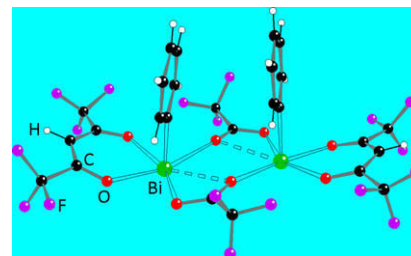


**Vitalie Stavila, Evgeny V. Dikarev**

*J. Organomet. Chem.* 694 (2009) 2956

Phenyl bismuth  $\beta$ -diketonate complexes: Synthesis and structural characterization

Phenylbismuth(III) hexafluoroacetylacetonate,  $\text{BiPh}(\text{hfac})_2$  (**1**) and its adducts  $[\text{BiPh}(\text{hfac})_2(\text{L})]$  ( $\text{Hhfac} = 1,1,1,5,5,5$ -hexafluoro-2,4-pentanedione;  $\text{L} = \text{H}_2\text{O}$  (**1a**),  $\text{Me}_2\text{CO}$  (**1b**), THF (**1c**), DMA (**1d**), DMSO (**1e**), and PhCN (**1f**), as well as a dimeric hexafluoroacetate–trifluoroacetate complex,  $[\text{BiPh}(\text{hfac})(\text{O}_2\text{CCF}_3)]_2$  (**2**), have been synthesized and structurally characterized.

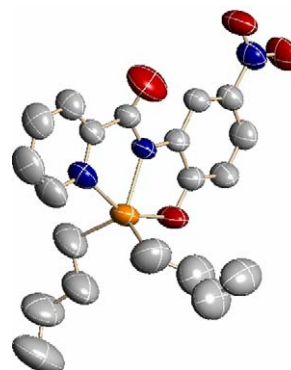


**Alejandro Ramírez-Jiménez,  
Elizabeth Gómez, Simón Hernández**

*J. Organomet. Chem.* 694 (2009) 2965

Penta- and heptacoordinated tin(IV) compounds derived from pyridine Schiff bases and 2-pyridine carboxylate: Synthesis and structural characterization

The synthesis of the Sn(IV)-complexed, Schiff base derivatives **1a–1l**, prepared in one pot is described. The complexes were characterized by IR, MS,  $^1\text{H}$ ,  $^{13}\text{C}$ ,  $^{119}\text{Sn}$  NMR. An unusual reduction–oxidation reaction took place by the reaction of 2-amino-4-nitro-phenol, dibutyltin oxide and 2-pyridinecarboxaldehyde which produced the corresponding amine, **3h**, and the amide, **4h**, tin(IV) derivatives. Both structures were established by X-ray crystallography.

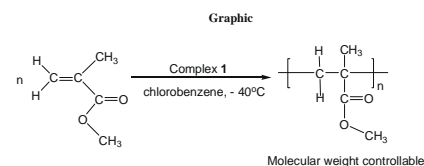


**Dan Lin, Jue Chen, Chengcai Luo,  
Yong Zhang, Yingming Yao, Yunjie Luo**

*J. Organomet. Chem.* 694 (2009) 2976

Rare earth metal benzyl complexes bearing bridged-indenyl ligand for highly active polymerization of methyl methacrylate

The bridged-indenyl rare earth metal benzyl complexes  $[(C_9H_6SiMe_2(CH_2)_2SiMe_2C_9H_6)Ln(CH_2C_6H_4-p-Bu)_2][Li(THF)_4]$  ( $Ln = Y$  (1), Lu (2)) were synthesized by treatment of  $C_9H_7SiMe_2(CH_2)_2SiMe_2C_9H_7$  with one equiv. of rare earth metal tris-benzyl complexes formed *in situ* from the reaction of  $LnCl_3$  with 3 equiv. of  $LiCH_2C_6H_4-p-Bu$ . Both complexes are highly active for MMA polymerization.

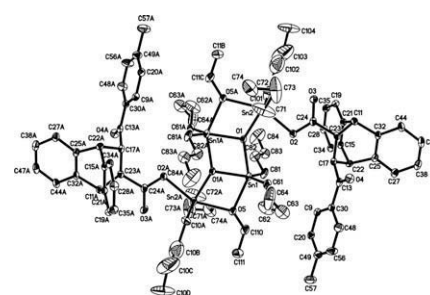


**Xiaoyan Wu, Wanli Kang,  
Dongsheng Zhu, Chaoguang Zhu,  
Shuren Liu**

*J. Organomet. Chem.* 694 (2009) 2981

Synthesis, crystal structure and biological activities of two novel organotin(IV) complexes constructed from 12-(4-methylbenzoyl)-9,10-dihydro-9,10-ethanoanthracene-11-carboxylic acid

Two complexes 1 and 2 have been synthesized by the reaction of 12-(4-methylbenzoyl)-9,10-dihydro-9,10-ethanoanthracene-11-carboxylic acid with  $n-Bu_2SnO$  and  $(C_6H_5)_3SnOH$  by azeotropic dehydration in the solvent of absolute benzene, respectively. The crystal structures of both two complexes have been determined by X-ray crystallography.

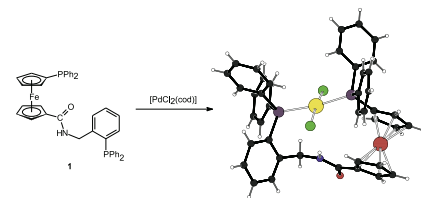


**Petr Štěpnička, Martin Krupa,  
Martin Lamač, Ivana Císarová**

*J. Organomet. Chem.* 694 (2009) 2987

*trans*-Spanning ferrocene amidodiphosphine ligand: Synthesis, palladium complexes and catalytic use in Suzuki–Miyaura cross-coupling

A novel diphosphine-amide, viz 1- $N$ -[(2-(diphenylphosphino)phenyl)methyl]carbamoyl-1'-(diphenylphosphino)ferrocene (1) was prepared by amide coupling between 2- $Ph_2PC_6H_4CH_2NH_2$  and 1'-(diphenylphosphino)ferrocene-1-carboxylic acid. Depending on the metal source, this ligand forms *trans*-chelate complexes  $[PdCl(X)(1-\kappa^2P,P')]$  ( $X = Cl$  or Me) or  $P,P'$ -bridged dipalladium(II) complexes  $[(\mu-1)\{Pd(Cl)L\}_2]$  ( $L = (Cl)PBu_3$  or 2-[(dimethylamino- $\kappa N$ )methyl]phenyl- $\kappa C^1$ ).

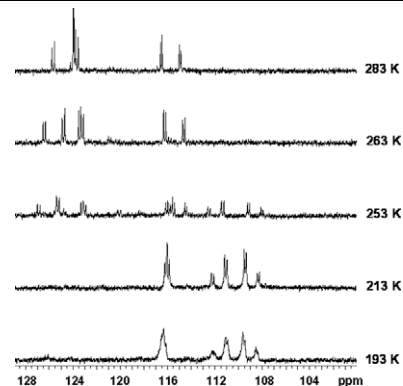


**Sandra Bolaño, Jorge Bravo,  
Flor Fernández-García,  
Soledad García-Fontán,  
María del Carmen Marín**

*J. Organomet. Chem.* 694 (2009) 2994

Hydride and dihydrogen dicarbonylrhenium(I) complexes with phosphites, phosphonites and phosphinites

Photoirradiation of a toluene solution of  $[ReH(CO)_3(L)]$  [ $L = 1,2$ -bis(diphenylphosphinoxy)ethane] in the presence of  $PPh_n(OR)_{3-n}$  ( $n = 0, 1$ ;  $R = Me, Et$ ) gives new hydride compounds of formula  $[ReH(CO)_2(L)(L')]$  [ $L' = P(OMe)_3$  (1);  $P(OEt)_3$  (2);  $PPh(OMe)_2$  (3);  $PPh(OEt)_2$  (4)]. Protonation of compounds 1–4 in  $CD_2Cl_2$  gave the corresponding dihydrogen complexes.

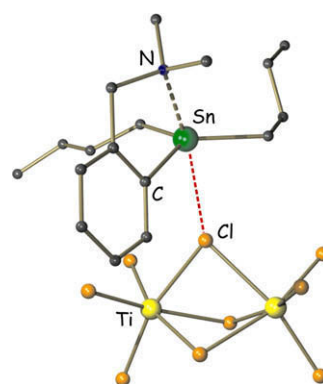


**Jan Turek, Zdenka Padělková,  
Zdeněk Černošek, Milan Erben,  
Antonín Lyčka, Mikhail S. Nechaev,  
Ivana Císařová, Aleš Růžička**

*J. Organomet. Chem.* 694 (2009) 3000

C,N-chelated hexaorganodistannanes, and triorganotin(IV) hydrides and cyclopentadienides

Triorganotin(IV) hydrides, distannanes and cyclopentadienides containing  $L^{CN}$  (2-(*N,N*-dimethylaminomethyl)phenyl-) as chelating ligand and phenyl, *n*-butyl or *t*-butyl substituents were prepared and characterized by NMR and XRD techniques and their reactivity studied.

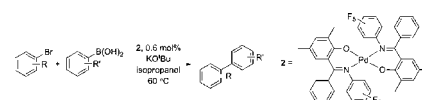


**Daniel F. Brayton, Timothy M. Larkin,  
David A. Vicic, Oscar Navarro**

*J. Organomet. Chem.* 694 (2009) 3008

Synthesis of a bis(phenoxyketimine) palladium(II) complex and its activity in the Suzuki–Miyaura reaction

The synthesis of a new charge-neutral, air- and moisture-stable decafluorinated bis(phenoxyketimine) Pd(II) complex is presented. Its activity as a precatalyst in the Suzuki–Miyaura cross-coupling reaction of activated and unactivated bromides has been explored.

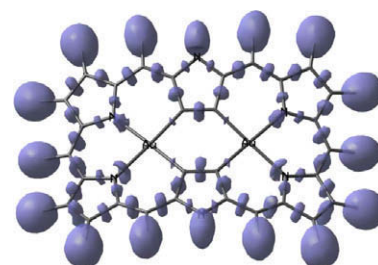


**Yu-Lan Zhu, Shu-Yu Zhou, Yu-He Kan,  
Zhong-Min Su**

*J. Organomet. Chem.* 694 (2009) 3012

Theoretical investigation of electronic structures and excitation energies of hexaphyrin and its group 11 transition metal (III) complexes

According to the results of NBO and ELF, metal–ligand bonds show slightly covalent character. Metalation leads to red shifts in the spectra of the corresponding metal complexes with respect to that of hexaphyrin. Spin–orbit coupling has little effects on the electronic spectra of metal complexes of hexaphyrin.

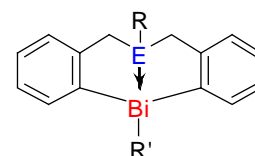


**Xiao-Wen Zhang, Jun Xia, Hui-Wen Yan,  
Sheng-Lian Luo, Shuang-Feng Yin,  
Chak-Tong Au, Wai-Yeung Wong**

*J. Organomet. Chem.* 694 (2009) 3019

Synthesis, structure, and in vitro antiproliferative activity of cyclic hypervalent organobismuth(III) chlorides and their triphenylgermylpropionate derivatives

Six compounds of cyclic hypervalent organobismuth(III) chlorides and their triphenylgermylpropionate derivatives were synthesized and characterized. It was revealed that the eight-membered tetrahydroazabismocine rings are highly flexible. Moreover, the complexes were found to show good antitumor activities against gastric carcinoma cells MGC-803 much better than cisplatin. The  $IC_{50}$  value is 0.7  $\mu$ M for the thiabismocine triphenylgermylpropionate.



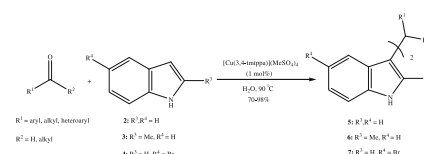
- 1)  $E=N$  R=phenyl, cyclohexyl  
R'=Cl, OC(O)CH<sub>2</sub>CH<sub>2</sub>GePh<sub>3</sub>
- 2)  $E=S$  without R  
R'=Cl, OC(O)CH<sub>2</sub>CH<sub>2</sub>GePh<sub>3</sub>

**Sara Sobhani, Elham Safaei,  
Ali-Reza Hasaninejad,  
Soodabeh Rezaadeh**

*J. Organomet. Chem.* 694 (2009) 3027

An eco-friendly procedure for the efficient synthesis of bis(indolyl)methanes in aqueous media

A new, convenient and high yielding procedure for the preparation of bis(indolyl)methanes in water by electrophilic substitution reaction of indoles with different carbonyl compounds in the presence of a catalytic amount of [Cu(3,4-tmtppa)]-(MeSO<sub>4</sub>)<sub>4</sub> (1 mol%) as a highly stable and reusable catalyst is described. This procedure has also been applied successfully for the preparation of bis(pyrazole-5-ols) and dipyrromethanes.

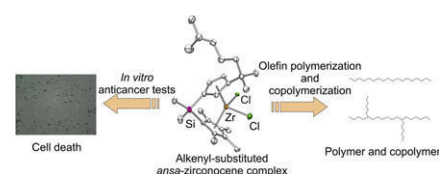


**Santiago Gómez-Ruiz,  
Goran N. Kaluderović, Dorian Polo-Cerón,  
Valentina Tayurskaya, Sanjiv Prashar,  
Mariano Fajardo, Reinhard Paschke**

*J. Organomet. Chem.* 694 (2009) 3032

A novel alkenyl-substituted *ansa*-zirconocene complex with dual application as olefin polymerization catalyst and anticancer drug

The alkenyl-substituted zirconocene complex [Zr{Me<sub>2</sub>Si(η<sup>5</sup>-C<sub>5</sub>Me<sub>4</sub>)(η<sup>5</sup>-C<sub>5</sub>H<sub>3</sub>(CMe<sub>2</sub>-CH<sub>2</sub>CH<sub>2</sub>CH=CMe<sub>2</sub>))}Cl<sub>2</sub>] has been prepared and used as a catalyst in ethylene polymerization and ethylene–1-octene copolymerization. In addition, this novel zirconium complex exhibits high cytotoxic activity against human cancer cells.



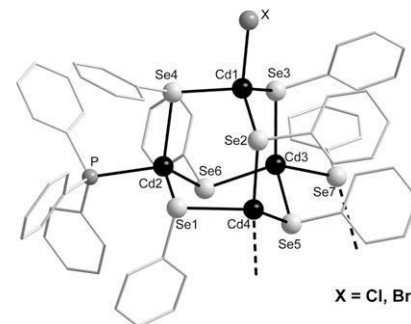
## Notes

**Ernesto Schulz Lang, Robert A. Burrow,  
Rafael Stieler, Marcos Antonio Villetti**

*J. Organomet. Chem.* 694 (2009) 3039

Cadmium bis(phenylselenolate) as a precursor for the synthesis of polymeric Cd(μ-Se)clusters: Crystal and molecular structures of [Cd<sub>4</sub>(SePh)<sub>7</sub>(PPh<sub>3</sub>)X]<sub>n</sub> (X = Cl, Br)

The reaction of Cd(SePh)<sub>2</sub> with CdX<sub>2</sub> (X = Cl, Br) in MeOH in the presence of PPh<sub>3</sub> at 130 °C under solvothermal conditions affords the product [Cd<sub>4</sub>(SePh)<sub>7</sub>(PPh<sub>3</sub>)X]<sub>n</sub>, a one-dimensional assembly of adamantanoid clusters joined into a polymeric chain by μ-SePh bridges.



**Pradeep Mathur,  
Sathyanarayana Boodida,  
Radhe Shyam Ji, Shaikh M. Mobin**

*J. Organomet. Chem.* 694 (2009) 3043

Fe(CO)<sub>5</sub> promoted C–S bond activation and formation of an unusual C<sub>2</sub>S<sub>3</sub> ligand in [{Fe<sub>2</sub>(CO)<sub>6</sub>]<sub>2</sub>(μ-C<sub>2</sub>S<sub>3</sub>)}

Photolysis of a hexane solution containing Fe(CO)<sub>5</sub> and CS<sub>2</sub> yields a novel cluster [{Fe<sub>2</sub>(CO)<sub>6</sub>]<sub>2</sub>(μ-C<sub>2</sub>S<sub>3</sub>)} (1). Its molecular structure was determined by single crystal X-ray diffraction methods and shown to consist of two distinct Fe<sub>2</sub>(CO)<sub>6</sub> units linked by an unusual C<sub>2</sub>S<sub>3</sub> unit.

