



## Contents

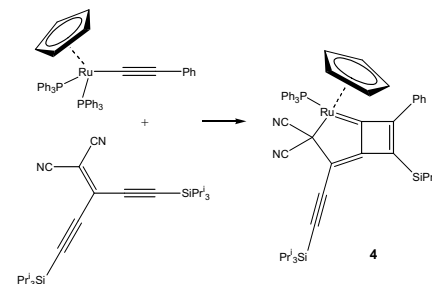
### Communication

**David J. Armit, Michael I. Bruce,  
Jonathan C. Morris, Brian W. Skelton,  
Allan H. White**

*J. Organomet. Chem.* 694 (2009) 1

Formation of a cyclobutenylidene by cycloaddition of an alkynyl-ruthenium complex to a cyano(alkynyl)ethene

In contrast to the usual formal [2+2]-cycloaddition reaction,  $(\text{NC})_2\text{C}=\text{C}(\text{C}\equiv\text{C}(\text{SiPr}'_3))_2$  reacts with  $\text{Ru}(\text{C}\equiv\text{CPh})(\text{PPh}_3)_2\text{Cp}$  to give the unprecedented cyclobutenylidene complex  $\text{Ru}\{\text{C}(\text{CN})_2\text{C}[\text{C}\equiv\text{C}(\text{SiPr}'_3)]\}=\text{CC}(\text{SiPr}'_3)=\text{CPhC}=\{\text{PPh}_3\}\text{Cp}$  **4**, formed by addition of one of the  $\text{C}\equiv\text{C}(\text{SiPr}'_3)$  groups to the  $\text{Ru}-\text{C}\equiv\text{CPh}$  moiety and subsequent electronic reorganisation.



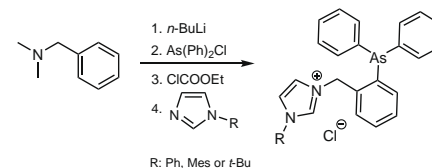
### Regular Papers

**Frank Stiemke, Mimoza Gjika,  
Dieter E. Kaufmann**

*J. Organomet. Chem.* 694 (2009) 5

Novel triphenylarsinyl-functionalized *N*-heterocyclic carbene ligands in palladium-catalyzed C–C coupling reactions

Novel, mixed ligands with a combination of arsine and carbene centers have been synthesized and characterized by us in detail (NMR, X-ray). The air stable ligands allow to run palladium-catalyzed C–C coupling reactions (Heck, reductive Heck, domino-Heck, Suzuki reactions) under mild temperature conditions with good to excellent yields.

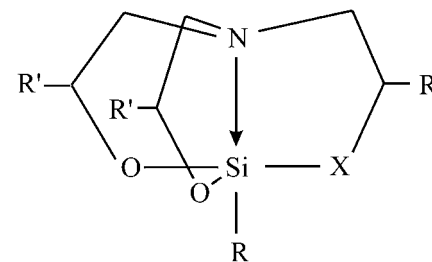


**Ilona Kovács, Eberhard Matern,  
Ewald Sattler, Christopher E. Anson,  
László Párkányi**

*J. Organomet. Chem.* 694 (2009) 14

The synthesis, crystal structures and NMR spectroscopic investigation of 3,7,10-trimethylsilatranes and carbasilatranes

A number of novel 3,7,10-trimethylsilatranes  $(\text{RSi}[\text{OCH}(\text{CH}_3)\text{CH}_2]_3\text{N})$  and  $(\text{RSi}(\text{CH}_2\text{CH}_2\text{CH}_2)(\text{OCH}_2\text{CH}_2)_2\text{N})$  carbasilatranes have been prepared and characterised, both structurally and by NMR spectroscopy. The crystal structures of both diastereomers of phenyl-3,7,10-trimethylsilatrane and of the symmetrical isomer of *p*-tolyl-3,7,10-trimethylsilatrane have been determined.



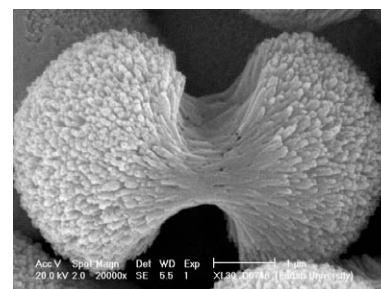
$\text{R}'=\text{CH}_3$ ,  $\text{X}=\text{O}$  or  $\text{R}'=\text{H}$ ,  $\text{X}=\text{CH}_2$   
 $\text{R}=\text{alkyl, aryl, alkoxy, aryloxy}$

**Tiejian Zhu, Qingsheng Wu, Ping Chen, Yaping Ding**

*J. Organomet. Chem.* 694 (2009) 21

A novel waist-regulable dumbbell-like nanosuperstructure of (3-carboxy-1-acyl-propyl)-ferrocene

Was first prepared by ultrasonic and controlling pH value, which opens a new way for fabricating nanosuperstructures and developing application on metallocenes.

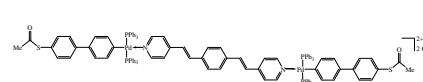


**Heinrich Lang, Katrin Döring, Deeb Taher, Uwe Siegert, Bernhard Walfort, Tobias Rüffer, Rudolf Holze**

*J. Organomet. Chem.* 694 (2009) 27

Linear homobimetallic palladium complexes with end-capped SC(O)Me units

The synthesis of *trans*-[(MeC(O)S-4-C<sub>6</sub>H<sub>4</sub>C<sub>6</sub>H<sub>4</sub>)(Ph<sub>3</sub>P)<sub>2</sub>Pd](X) (X = I, OTf) is discussed. Treatment of *trans*-[(C<sub>6</sub>H<sub>4</sub>C<sub>6</sub>H<sub>4</sub>-4-I)(Ph<sub>3</sub>P)<sub>2</sub>Pd](OTf) with the bidentate Lewis-bases N<sup>∩</sup>N (N<sup>∩</sup>N = 4,4'-bipyridine, C<sub>5</sub>H<sub>4</sub>N-CH=N-N=CH-C<sub>5</sub>H<sub>4</sub>N, C<sub>5</sub>H<sub>4</sub>N-CH=CH-C<sub>6</sub>H<sub>4</sub>-CH=CH-C<sub>5</sub>H<sub>4</sub>N, C<sub>5</sub>H<sub>4</sub>N-CH=N-C<sub>6</sub>H<sub>4</sub>-N=CH-C<sub>5</sub>H<sub>4</sub>N) in the ratio of 2:1 produced linear homobimetallic [{*trans*-(MeC(O)S-4-C<sub>6</sub>H<sub>4</sub>C<sub>6</sub>H<sub>4</sub>)(Ph<sub>3</sub>P)<sub>2</sub>Pd}<sub>2</sub>(μ-N<sup>∩</sup>N)](OTf)<sub>2</sub>. The electrochemical and molecular solid state behavior of these molecules is reported.

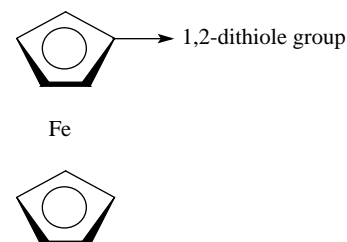


**Marie-Laurence Abasq, Mokhtar Saidi, Jean-Louis Burgot, André Darchen**

*J. Organomet. Chem.* 694 (2009) 36

Substituent effects of 1,2-dithiole groups on the electrochemical oxidation of some ferrocenyl-1,2-dithiole compounds

Ferrocenyl compounds substituted by 1,2-dithiole groups have been synthesized and their reversible oxidation potentials have been measured. Thanks to linear Hammett type correlation, the electronic electron withdrawing effect of six 1,2-dithiole groups have been obtained.

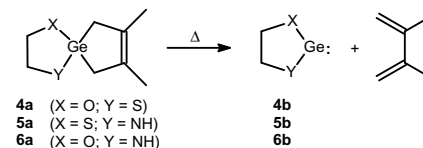


**Anna Chrostowska, Virginie Lemierre, Alain Dargelos, Patrick Baylère, William J. Leigh, Ghassoub Rima, Lothar Weber, Michaela Schimmel**

*J. Organomet. Chem.* 694 (2009) 43

Gas-phase synthesis and characterization of heteroleptic divalent germanium compounds by FVT/UV-PES

Three cyclic germanediyls, containing oxo-thio, oxo-amino, and thio-amino substitution at germanium, have been generated by flash vacuum thermolysis and characterized by UV photoelectron spectroscopy. The strong  $\sigma$ -withdrawing effect of oxygen and the strong  $\pi$ -donating effect of nitrogen are the two main factors affecting the electronic structures of these germylene derivatives.

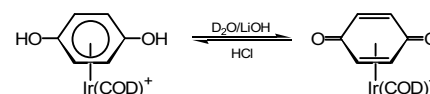


**Sang Bok Kim, Chen Cai, Marcus D. Faust, William C. Trenkle, Dwight A. Sweigart**

*J. Organomet. Chem.* 694 (2009) 52

The synthesis and catalytic activity of the iridium(I) hydroquinone complex  $[(H_2Q)Ir(COD)]^+$

The cationic  $\eta^6$ -hydroquinone iridium complex  $(\eta^6-H_2Q)Ir(COD)^+$  undergoes facile double deprotonation to the anionic  $\eta^4$ -quinone analogue, which is shown to catalyze the 1,4-conjugate addition reactions of aryl boronic acids to electron deficient olefins.

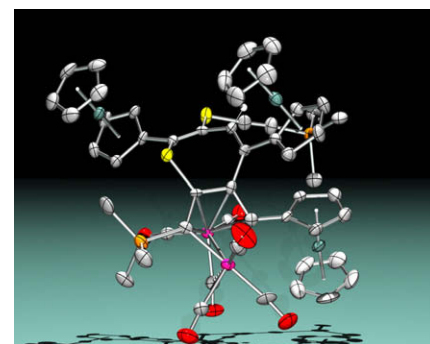


**Esther Delgado, Elisa Hernández, Braulio Hernández, Ángel Nievas, Avelino Martín**

*J. Organomet. Chem.* 694 (2009) 57

Ferrole-type compounds containing thiophenic or thiepinic rings in the 3,4-positions of the metallacycle

Six new “ferrole-type” complexes, containing different organosulfur substituents, thiophenic or thiepinic rings, in the penta-metallacycle, have been obtained. The structures of four of them have been determined by single crystal X-ray diffraction methods.

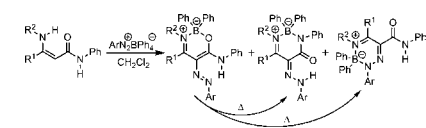


**Markéta Svobodová, Jan Bárta, Petr Šimůnek, Valerio Bertolasi, Vladimír Macháček**

*J. Organomet. Chem.* 694 (2009) 63

Straightforward access to oxazaborines, diazaborinones and triazaborines by reactions of  $\beta$ -enaminoamides with 4-methylbenzenediazonium tetraphenylborate

The substituted  $\beta$ -enaminoamides react with 4-methylbenzenediazonium tetraphenylborate in dichloromethane to give mixtures of novel boron containing heterocyclic compounds: 1,3,2 $\lambda^4$ -oxazaborines, 1H-1,3,2 $\lambda^4$ -diazaborin-4-ones and 4H-1,2,4,3 $\lambda^4$ -triazaborines.

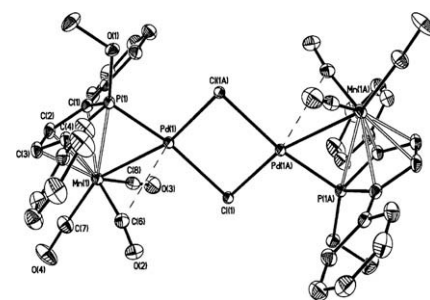


**Allan G. Ginzburg, Vasily V. Bashilov, Fedor M. Dolgushin, Alexander F. Smol'yakov, Alexander S. Peregudov, Viatcheslav I. Sokolov**

*J. Organomet. Chem.* 694 (2009) 72

Unexpected reaction pathway during the palladation of 2,5-diphenylphosphacymantrene

A new reaction of *P*-alkoxy-palladation was found. 2,5-Diphenylphosphacymantrene reacts with  $Na_2PdCl_4$  and NaOAc in MeOH or EtOH to give *P*-methoxy or *P*-ethoxy derivatives with  $Pd_2Cl_2$  dimeric core. The products **2** and **3** were characterized by  $^1H$ ,  $^{31}P$ ,  $^{13}C$  NMR spectra and X-ray crystal structure data.

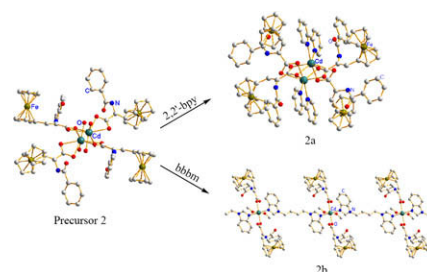


**Xia Wang, Yaru Liu, Hongwei Hou,  
Jie Wu, Yaoting Fan**

*J. Organomet. Chem.* 694 (2009) 77

The synthesis of complexes using precursor complexes with ferrocenyl carboxylate units as building blocks

We synthesized a mononuclear complex 1 and a binuclear complex 2 as precursor complexes. Investigation on the substitution reaction of two ferrocenyl carboxylate precursor complexes as building blocks, four complexes **1a**, **1b**, **2a** and **2b** were obtained. The structural integrity of precursor complexes can be maintained in these four complexes. It indicates that we can synthesize the desired complexes with the destination structures by using precursor complexes as building blocks and choosing appropriate auxiliary ligands.

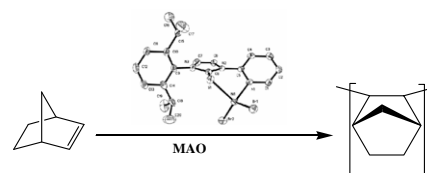


**Yuan-Biao Huang, Wei-Guo Jia,  
Guo-Xin Jin**

*J. Organomet. Chem.* 694 (2009) 86

Synthesis, characterization and olefin polymerization of the nickel catalysts supported by [N,S] ligands

Two nickel(II) complexes bearing 1-pyridyl-(3-substitutedimidazole-2-thione) ligands exhibit high catalytic activities for the addition-polymerization of norbornene in the presence of MAO.

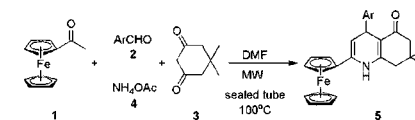


**Shu-Jiang Tu, Shu Yan, Xu-Dong Cao,  
Shan-Shan Wu, Xiao-Hong Zhang,  
Wen-Juan Hao, Zheng-Guo Han, Feng Shi**

*J. Organomet. Chem.* 694 (2009) 91

A facile and expeditious microwave-assisted synthesis of 4-aryl-2-ferrocenyl-quinoline derivatives via multi-component reaction

An efficient and rapid route for the synthesis of 4-aryl-2-ferrocenyl-quinoline derivatives through microwave-assisted multi-component reaction of acetylferrocene with aromatic aldehyde and dimedone in the presence of ammonium acetate using DMF as reaction media at 100 °C is described. This novel procedure lends itself well to combinatorial methods, providing the target heteropolymetallic compounds in excellent yield without further purification.

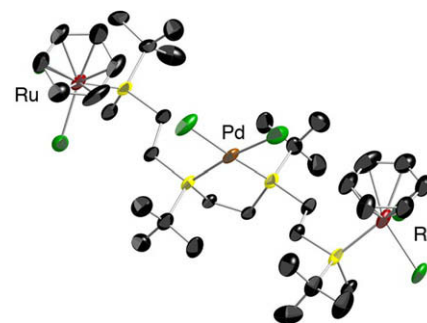


**Keiji Yashio, Masatoshi Kawahata,  
Hiroshi Danjo, Kentaro Yamaguchi,  
Masaharu Nakamura, Tsuneo Imamoto**

*J. Organomet. Chem.* 694 (2009) 97

Construction of optically active multimetallic systems of rhodium(I), palladium(II), and ruthenium(II) with a P-chiral tetraphosphine ligand

Mono-, di-, or trinuclear homo- or heterometallic complexes of (3*S*,6*R*,9*R*,12*S*)-6,9-di-*tert*-butyl-2,2,3,12,13,13-hexamethyl-3,6,9,12-tetraphosphatetradecane were selectively prepared from rhodium(I), palladium(II), and ruthenium(II) complex precursors. These complexes were characterized by NMR and X-ray crystallographic analysis.

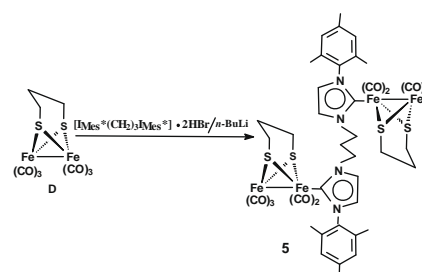


**Li-Cheng Song, Xiang Luo,  
Yong-Zhen Wang, Bin Gai, Qing-Mei Hu**

*J. Organomet. Chem.* 694 (2009) 103

Synthesis, characterization and electrochemical behavior of some *N*-heterocyclic carbene-containing active site models of [FeFe]-hydrogenases

Five *N*-heterocyclic carbene H-cluster model compounds (1–5), as well as the propylene-bridged imidazolium salt [1<sup>+</sup><sub>Mes</sub>(CH<sub>2</sub>)<sub>3</sub>1<sup>+</sup><sub>Mes</sub>] · 2HBr have been synthesized and crystallographically characterized. H<sub>2</sub> evolution is observed catalyzed by 2 under electrochemical conditions.

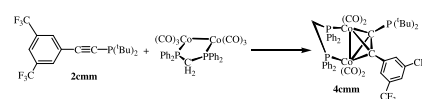


**Po-Cheng Huang, Fung-E. Hong**

*J. Organomet. Chem.* 694 (2009) 113

Amination and Suzuki coupling reactions catalyzed by palladium complexes coordinated by cobalt-containing monodentate phosphine ligands with bis-trifluoromethyl substituents on bridged arylolefinyl: Observation of some unusual metal-containing compounds

A cobalt-containing bulky monodentate phosphine **4cmm** was prepared from the reaction of **3** with corresponding alkyne **2cmm**. Its capacity as phosphine ligand in the amination as well as Suzuki coupling reactions in the presence of palladium salt was evaluated.



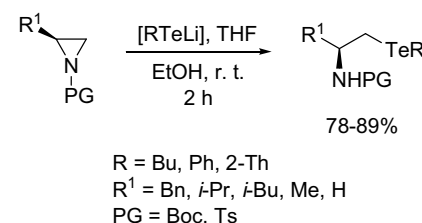
## Notes

**Fabricio Vargas, João V. Comasseto**

*J. Organomet. Chem.* 694 (2009) 122

Practical synthesis of chiral β-telluro amines by ring-opening reaction of aziridines

A wide range of chiral β-tellurium amines and their chalcogen derivatives were conveniently prepared via the ring-opening reaction of aziridines.

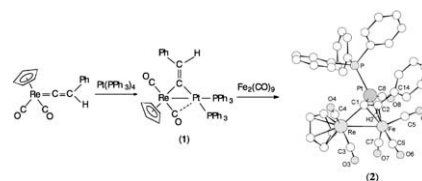


**Alla B. Antonova, Oleg S. Chudin,  
Alexander D. Vasiliev, Nina I. Pavlenko,  
William A. Sokolenko, Anatoly I. Rubaylo,  
Oleg V. Semeikin**

*J. Organomet. Chem.* 694 (2009) 127

Chemistry of vinylidene complexes. XVIII. Synthesis and molecular structure of the novel trinuclear μ<sub>3</sub>-vinylidene complex CpReFePt(μ<sub>3</sub>-C=CHPh)(CO)<sub>6</sub>(PPh<sub>3</sub>)

The heterometallic μ<sub>3</sub>-vinylidene complex CpReFePt(μ<sub>3</sub>-C=CHPh)(CO)<sub>6</sub>(PPh<sub>3</sub>) (**2**) is formed by consecutive reactions of Cp(CO)<sub>2</sub>Re=C=CHPh with Pt(PPh<sub>3</sub>)<sub>4</sub> and Cp(CO)<sub>2</sub>RePt(μ-C=CHPh)(PPh<sub>3</sub>)<sub>2</sub> (**1**) with Fe<sub>2</sub>(CO)<sub>9</sub>. Compound **2** is the first structurally characterized μ<sub>3</sub>-vinylidene cluster with the ReFePt core and belongs to the special type of vinylidene complexes with the central fragment including a chain of several different metal atoms.

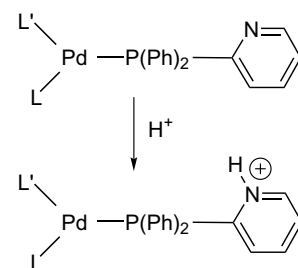


**A. Scrivanti, M. Bertoldini, V. Beghetto,  
U. Matteoli, A. Venzo**

*J. Organomet. Chem.* 694 (2009) 131

Protonation of palladium(II)-allyl and palladium(0)-olefin complexes containing 2-pyridyldiphenylphosphine

The pendant nitrogen atom of the Ph<sub>2</sub>PPy ligand of some palladium(II)-allyl and palladium(0)-olefin complexes has been protonated with methanesulfonic acid. According to the NMR data of the protonated complexes the ligand upon protonation becomes a weaker  $\sigma$ -donor and a better  $\pi$ -acceptor.



$L' = \eta^3\text{-methyllyl}$  or  $\eta^2\text{-fumarionitrile}$

$L = \text{Cl}$  or  $\text{PPh}_2\text{Py}$

**Alexander G. Russell, Tatyana Guveli,  
Benson M. Kariuki, John S. Snaith**

*J. Organomet. Chem.* 694 (2009) 137

Synthesis and characterisation of two new binaphthyl trisilanes

The synthesis of two binaphthyl trisilanes is described. They have been characterised by  $^1\text{H}$ ,  $^{13}\text{C}$  and  $^{29}\text{Si}$  NMR spectroscopy, and also by a crystal structure analysis for one of the compounds.

