



## Contents

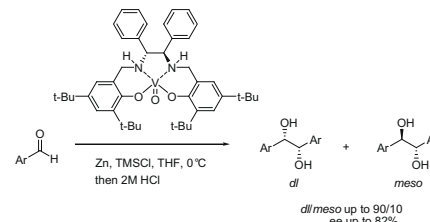
### Communication

Jiangtao Sun, Zhenya Dai, Changsi Li, Xu Pan, Chengjian Zhu

*J. Organomet. Chem.* 694 (2009) 3219

Enantioselective pinacol coupling reaction of aromatic aldehydes catalyzed by chiral vanadium complexes

The asymmetric pinacol coupling of aromatic aldehydes by chiral salen-vanadium complexes as effective catalysts is reported. Chiral 1,2-diols were obtained with high diastereoselectivities (up to 90/10) and moderate to high enantioselectivities (up to 82% ee). The possible mechanism of the pinacol coupling reaction is also discussed.



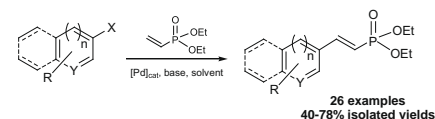
### Regular Papers

Walid Al-Maksoud, Julien Mesnager, Farouk Jaber, Catherine Pinel, Laurent Djakovitch

*J. Organomet. Chem.* 694 (2009) 3222

Synthesis of diethyl 2-(aryl)vinylphosphonates by the Heck reaction catalysed by well-defined palladium complexes

The Pd-catalysed synthesis of diethyl 2-(aryl)vinylphosphonates by direct Heck arylation of diethyl vinylphosphonate with various aryl or heteroaryl halides is reported. Several homogeneous catalytic systems were used and compared giving high conversions and selectivities under optimised conditions.



Xiaofei Qiao, Bing Yan

*J. Organomet. Chem.* 694 (2009) 3232

Chemically bonded assembly and photophysical properties of luminescent hybrid polymeric materials embedded into silicon-oxygen network and carbon unit

Through the reaction between the hydroxyl groups of 2-hydroxyl-3-methylbenzoic acid, the glycol, the diglycol or the polyglycol and the isocyanate groups of 3-(triethoxysilyl)-propyl isocyanate, the hybrid precursors were obtained and then the hybrid materials were assembled through hydrolysis and copolycondensation with the tetraethoxysilane via sol-gel process.



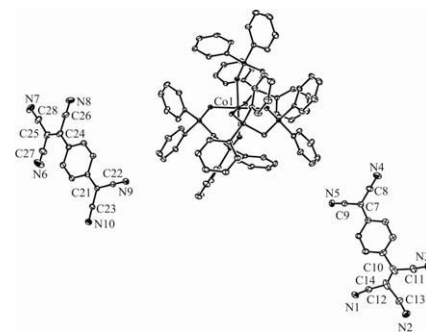
**Qi-Ying Lv, Shi-Di Tang, Xing-Wu Tan,  
Wen-Jun Lei, Ye Wang, Hou-Keng Lin,  
Ze-Quan Wu, Shu-Zhong Zhan**

*J. Organomet. Chem.* 694 (2009) 3242

Isolation of *p*-tricyanovinylphenyldicyanomethide ion via a [2+2] cycloaddition of 7,7,8,8-tetracyanoquinodimethane (TCNQ) molecules

In the presence of  $\text{CoCl}_2 \cdot 6\text{H}_2\text{O}$  and dppm, the reaction of TCNQ (7,7,8,8-tetracyanoquinodimethane) molecules by [2+2] cycloaddition forms a *p*-tricyanovinylphe-

nyldicyanomethide ion ( $\text{PCQ}^-$ ), which has been obtained as one anion unit in one new compound  $[\text{Co}(\text{dppm})_3][\text{PCQ}^-]_2 \cdot \text{H}_2\text{O}$  **1** (dppm = bis(diphosphino) methane). Its structure was determined by X-ray crystallography: **1** crystallizes in  $P\bar{1}$  with  $a = 14.174(3) \text{ \AA}$ ,  $b = 19.553(4) \text{ \AA}$ ,  $c = 19.776(4) \text{ \AA}$ ,  $\alpha = 112.72(3)^\circ$ ,  $\beta = 95.43(3)^\circ$ ,  $\gamma = 110.79(3)^\circ$ , and  $Z = 2$ . It was characterized by IR spectra, UV-Vis spectra, and cyclic voltammogram. Magnetic properties indicate that no magnetic coupling between  $\text{PCQ}^-$  and  $[\text{Co}(\text{dppm})_3]^{2+}$  unit.

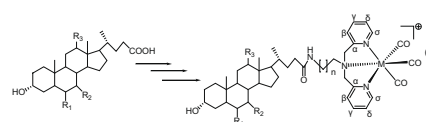


**Liliang Huang, Hua Zhu, Xiaoping Xu,  
Chunchun Zhang, Yu-Mei Shen**

*J. Organomet. Chem.* 694 (2009) 3247

Synthesis and characterization of organometallic rhenium(I) and technetium(I) bile acid complexes

Eight bile acid derivatives and their conjugates with  $[\text{Et}_4\text{N}]_2[\text{Re}(\text{CO})_3\text{Br}_3]$  and  $\text{fac}[\text{M}(\text{CO})_3(\text{H}_2\text{O})_3]^+$  ( $\text{M} = {}^{99\text{m}}\text{Tc}$ ,  $\text{Re}$ ) were synthesized. The radioactive technetium-99m complexes were prepared and challenged for stability in physiological phosphate buffer at  $37^\circ\text{C}$  for 24 h.

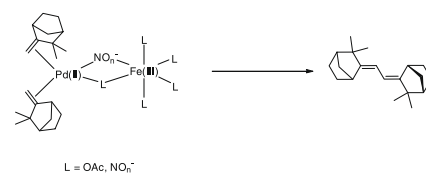


**Márcio J. da Silva,  
Róbson Ricardo Teixeira,  
Danielli Marcolan Carari**

*J. Organomet. Chem.* 694 (2009) 3254

$\text{Pd}(\text{OAc})_2/\text{M}(\text{NO}_3)_n$  ( $\text{M} = \text{Cu}(\text{II})$ ,  $\text{Fe}(\text{III})$ ;  $n = 2, 3$ ): Kinetic investigations of an alternative Wacker system for the oxidation of natural olefins

The efficiency of an alternative Wacker system, based on catalytic combination of  $\text{Pd}(\text{OAc})_2/\text{Fe}(\text{NO}_3)_3$  or  $\text{Pd}(\text{OAc})_2/\text{Cu}(\text{NO}_3)_2$ , on the oxidation of natural olefins was evaluated. The results of the kinetic investigations regarding the role of palladium catalyst, nitrate ion, dioxygen, and co-catalysts (iron and copper) are discussed.

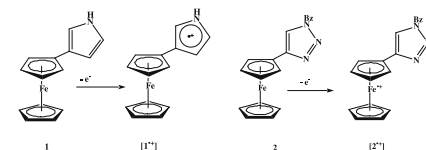


**Michael Verschoor-Kirss, Jozsef Kreisz,  
William Feighery, William M. Reiff,  
Christoph M. Frommen, Rein U. Kirss**

*J. Organomet. Chem.* 694 (2009) 3262

Synthesis and chemical oxidation of 3-ferrocenylpyrrole and ferrocenyl-substituted triazoles: Iron versus ligand based oxidation

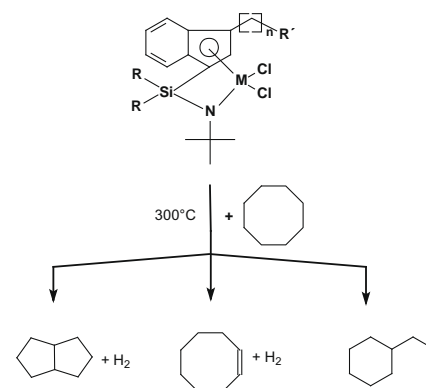
Chemical oxidation of **1** and **2** with DDQ yields the salts  $[\mathbf{1}^{\cdot+}][\text{DDQ}^-]$  and  $[\mathbf{2}^{\cdot+}][\text{DDQ}^-]$ , respectively.  $^{57}\text{Fe}$  Mössbauer spectroscopy reveals the presence of low-spin  $\text{Fe}^{\text{II}}$  in  $[\mathbf{1}^{\cdot+}][\text{DDQ}^-]$  while  $\text{Fe}^{\text{II}}$  is oxidized to low-spin  $\text{Fe}^{\text{III}}$  in  $[\mathbf{2}^{\cdot+}][\text{DDQ}^-]$ .



**H.G. Alt, Christine E. Denner***J. Organomet. Chem.* 694 (2009) 3270

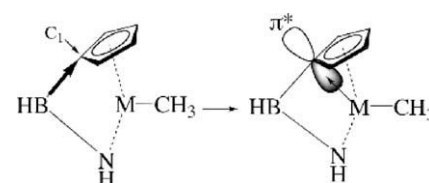
Catalytic thermal and photo-induced CH and CC activation reactions of alkanes with ansa amido functionalized half-sandwich complexes and methylalumoxane

Ansa amido functionalized half-sandwich complexes with group four metals are able to activate alkanes in a catalytic manner to give alkenes, branched isomers and C,C coupling products at higher temperatures (300 °C).

**Shogo Sakai, Yukihiro Kojima***J. Organomet. Chem.* 694 (2009) 3276

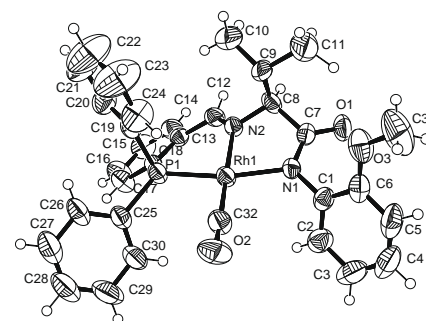
Theoretical studies on the role of bridging group of CGC type ligands for the Ziegler-Natta catalysis

Through-bond model for electronic effects.

**Alessia Bacchi, Marcella Balordi, Paolo Pelagatti, Corrado Pelizzi***J. Organomet. Chem.* 694 (2009) 3281

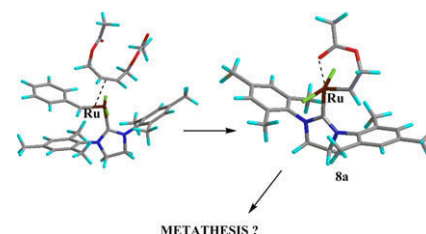
Carbonyl rhodium(I) complexes containing (H)PNX (X = O or N) ligands deriving from natural aminoacid-amides. Synthesis, X-ray structure and spectroscopic characterization

A series of new carbonyl Rh(I) complexes containing potentially tridentate chiral ligands have been obtained. The ligands can adopt a  $\kappa^2$ -(H)PN,  $\kappa^3$ -(H)PNO or  $\kappa^3$ -PNN' coordination mode, depending on the experimental conditions.

**Serguei Fomine, Selenia Gutierrez, Mikhail A. Tlenkopatchev***J. Organomet. Chem.* 694 (2009) 3287

Metathesis of carbonyl containing olefins by 2nd generation Ru alkylidene catalysts: A computational study

The driving force of the metathesis reaction is the formation of a Ru-O coordination bond in the corresponding Ru acetoxyethylidene complex **8a**. Additional stabilization of Ru center by carbonyl oxygen in **8a** reduces the activity of the complex as a catalyst.

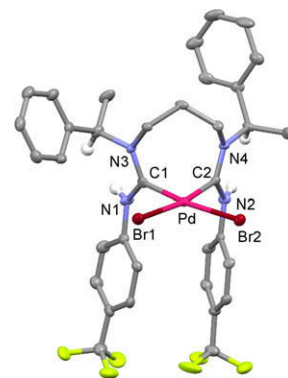


**Yoshitha A. Wanniarachchi,  
Sri S. Subramaniam,  
LeGrande M. Slaughter**

*J. Organomet. Chem.* 694 (2009) 3297

Palladium complexes of bis(acyclic diaminocarbene) ligands with chiral N-substituents and 8-membered chelate rings

Reaction of a palladium bis(isocyanide) complex with a diamine bearing (*R*)-1-phenylethyl N-substituents affords a chiral,  $C_1$ -symmetric, bis(acyclic diaminocarbene) chelate complex in one step. Increased bulk on the amine disfavors homochiral bis(ADC) ligands, though an achiral analogue was isolable.

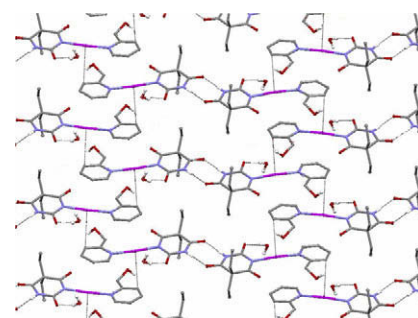


**Veysel T. Yilmaz, Eda Soyer,  
Orhan Buyukgungor**

*J. Organomet. Chem.* 694 (2009) 3306

Two-dimensional supramolecular networks generated from weak  $Ag \cdots C_{py}$  interactions: Synthesis, structural, thermal and fluorescence studies of silver(I) complexes of 5,5-diethylbarbiturate with pyridine-2-ylmethanol and 2,6-dimethoxy pyridine

$[Ag(\text{barb})(\text{pym})] \cdot \text{H}_2\text{O}$  and  $[Ag(\text{barb})(\text{dm-py})] \cdot 1.5\text{H}_2\text{O}$  complexes (barb = 5,5-diethylbarbiturate, pym = pyridine-2-ylmethanol and dm-py = 2,6-dimethoxy pyridine) have been synthesized and characterized. The molecules of both complexes are doubly bridged by  $N-H \cdots O$  hydrogen bonds and the hydrogen-bonded dimers are extended into 2D networks through weak  $Ag \cdots C_{py}$  ( $\eta^1$ ) interactions.

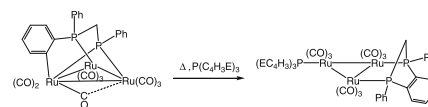


**Shishir Ghosh, Shahed Rana,  
Derek A. Tocher, Graeme Hogarth,  
Ebbe Nordlander, Shariff E. Kabir**

*J. Organomet. Chem.* 694 (2009) 3312

Reactivity of the triruthenium *ortho*-metalated cluster  $[Ru_3(CO)_9(\mu_3-\eta^1, \kappa^1, \kappa^2\text{-PhP}(\text{C}_6\text{H}_4)\text{CH}_2\text{PPh})]$  with tri(2-thienyl)phosphine and tri(2-furyl)phosphine: Formation of 1,3-diphenyl-2,3-dihydro-1H-1,3-benzodiphosphine complexes via phosphorus-carbon bond formation

Addition of  $P(\text{C}_4\text{H}_3\text{E})_3$  ( $E = \text{O}, \text{S}$ ) to  $[Ru_3(\text{CO})_9\{\mu_3-\eta^1, \kappa^1, \kappa^2\text{-PhP}(\text{C}_6\text{H}_4)\text{CH}_2\text{PPh}\}]$  results in carbon-phosphorus bond formation to give 1,3-diphenyl-2,3-dihydro-1H-1,3-benzodiphosphine (dpbm) complexes but competing carbon-hydrogen and carbon-phosphorus bond activation leads to mixtures of products.

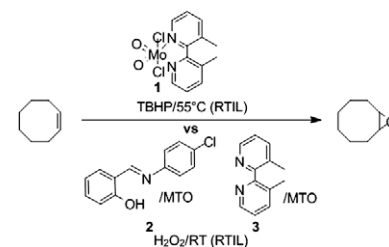


**Daniel Betz, Wolfgang A. Herrmann,  
Fritz E. Kühn**

*J. Organomet. Chem.* 694 (2009) 3320

Epoxidation in ionic liquids: A comparison of rhenium(VII) and molybdenum(VI) catalysts

Lewis base complexes of  $\text{MoO}_2\text{Cl}_2$  and methyltrioxorhenium (MTO) and Schiff-base complexes of MTO have been examined for the epoxidation of *cis*-cyclooctene in selected room temperature ionic liquids. MTO turns out to be a much more active and stable catalyst than the water sensitive  $\text{Mo}(\text{VI})$  compound.

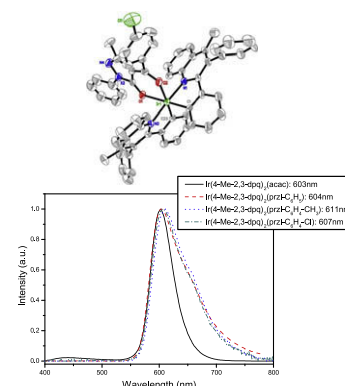


**Hyun Shin Lee, So Youn Ahn,  
Hyun Sue Huh, Yunkyoung Ha**

*J. Organomet. Chem.* 694 (2009) 3325

Introduction of new ancillary ligands to the iridium complexes having 2,3-diphenylquinolino ligands for OLED

A new series of the iridium complexes, Ir(4-Me-2,3-dpq)<sub>2</sub>(przl-R) were synthesized. The X-ray crystal structure of Ir(4-Me-2,3-dpq)<sub>2</sub>(przl-C<sub>6</sub>H<sub>4</sub>Cl) was determined. The electrochemical and luminescence properties of the complexes were investigated. The luminous efficiencies of Ir(4-Me-2,3-dpq)<sub>2</sub>(przl-C<sub>6</sub>H<sub>5</sub>) and Ir(4-Me-2,3-dpq)<sub>2</sub>(przl-C<sub>6</sub>H<sub>4</sub>CH<sub>3</sub>) were improved, compared with that of Ir(4-Me-2,3-dpq)<sub>2</sub>(acac).

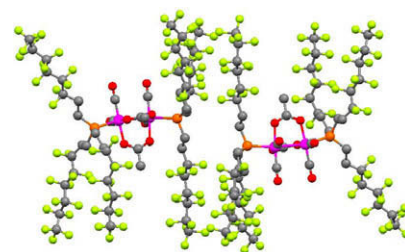


**Thomas J. Malosh, Scott R. Wilson,  
John R. Shapley**

*J. Organomet. Chem.* 694 (2009) 3331

Binuclear ruthenium complexes of fluorous phosphine ligands: Synthesis, properties, and biphasic catalytic activity. Crystal structure of [Ru(μ-O<sub>2</sub>CMe)(CO)<sub>2</sub>P(CH<sub>2</sub>CH<sub>2</sub>(CF<sub>2</sub>)<sub>5</sub>CF<sub>3</sub>)<sub>3</sub>]<sub>2</sub>

Dimeric ruthenium complexes, ligated by fluorous soluble tertiary phosphines, exhibit catalytic activity in a Fluorous Biphasic Catalytic System. Acetophenone is hydrogenated to provide 1-phenylethanol.

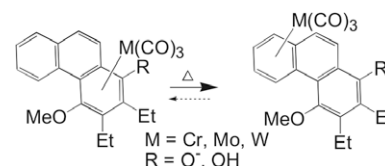


**Anja Pfltschinger, Michael Dolg**

*J. Organomet. Chem.* 694 (2009) 3338

Haptotropic migration of M(CO)<sub>3</sub> (M = Cr, Mo, W) on substituted phenanthrene

Gradient-corrected density functional theory calculations have been performed to investigate the effects on structures and energies of the haptotropic migration of a metal tricarbonyl group on a highly substituted phenanthrene when using the three homologue transition metals chromium, molybdenum and tungsten.

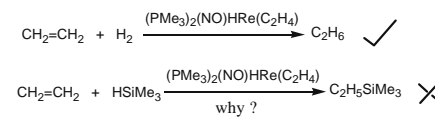


**Lingjun Liu, Siwei Bi, Min Sun,  
Xiangai Yuan, Ning Zheng, Ping Li**

*J. Organomet. Chem.* 694 (2009) 3343

Mechanistic investigation on hydrogenation and hydrosilylation of ethylene catalyzed by rhenium nitrosyl complex

The mechanistic investigation on hydrogenation and hydrosilylation of ethylene catalyzed by a rhenium nitrosyl complex has been carried out with the aid of the density functional theory calculations.

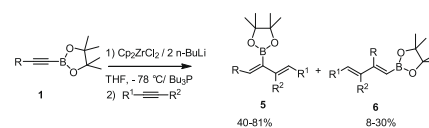


**Alina Botvinik, Abed Al Aziz Quntar, Avri Rubinstein, Morris Srebnik**

*J. Organomet. Chem.* 694 (2009) 3349

Synthesis of 2-boryl-1,3-butadienes from tributylphosphine stabilized zirconacycloprenes and alkynes

Boryl zirconacycloprenes stabilized with tributylphosphine react with alkynes (terminal and internal) to give predominantly 2-boryl-1,3-butadienes, **5**, in 40–81% isolated yields. Products **5** are accompanied by 1-boryl-1,3-butadienes, **6**, in 8–30% (GC yield) when terminal alkynes are inserted. However, the use of an internal alkyne (3-hexyne) gave predominantly **6c** (78% isolated yield).

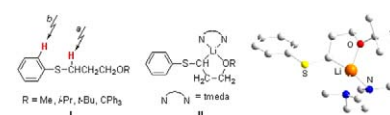


**Michael Block, Matthias Linnert, Santiago Gómez-Ruiz, Dirk Steinborn**

*J. Organomet. Chem.* 694 (2009) 3353

Lithiated  $\gamma$ -O-functionalized propyl phenyl sulfides and sulfones of the type  $\text{Li}[\text{CH}(\text{SO}_x\text{Ph})\text{CH}_2\text{CH}_2\text{OR}]$  ( $x = 0, 2$ ).  $[\text{Li}\{\text{CH}(\text{SPh})\text{CH}_2\text{CH}_2\text{OR}-\text{Bu}\}(\text{tmeda})]$  – A structurally characterized organolithium inner complex

Lithiation of O-functionalized alkyl phenyl sulfides  $\text{PhSCH}_2\text{CH}_2\text{CH}_2\text{OR}$  (**I**) with *n*-BuLi/tmeda were found to proceed at the  $\alpha$ - (**a**) and the *ortho*- (**b**) positions with  $\alpha$ /*ortho* ratios dependent on the sterical demand of the substituent R. Synthesis of the pure  $\alpha$ -lithiated compounds **II** gave proof that this directing effect is due to an organolithium inner complex formation.

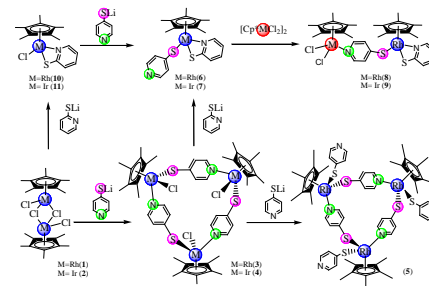


**Hui Wang, Xu-Qing Guo, Rui Zhong, Yue-Jian Lin, Peng-Cheng Zhang, Xiu-Feng Hou**

*J. Organomet. Chem.* 694 (2009) 3362

Reactions of half-sandwich rhodium(III) and iridium(III) compounds with pyridinethiolate ligands: Mono-, di-, and tri-nuclear complexes

Reactions of half-sandwich rhodium(III) and iridium(III) compounds with pyridinethiolate ligands afford eight organometallic complexes in which mono-, di-, and tri-nuclear  $\text{Cp}^*\text{Rh}$  or  $\text{Cp}^*\text{Ir}$  complexes were confirmed.



## Note

**Svetlana V. Amosova, Maxim V. Penzik, Alexander I. Albanov, Vladimir A. Potapov**

*J. Organomet. Chem.* 694 (2009) 3369

The reaction of selenium dichloride with divinyl sulfide

A synthesis of novel selenium heterocycles based on the reaction of selenium dichloride with divinyl sulfide has been described. At  $-50\text{ }^\circ\text{C}$  the reaction gives 2,6-dichloro-1,4-thiaselenane in quantitative yield. Upon standing in chloroform solution, 2,6-dichloro-1,4-thiaselenane undergoes spontaneous rearrangement to 5-chloro-2-chloromethyl-1,3-thiaselenolane. Under action of pyridine, 2,6-dichloro-1,4-thiaselenane is converted to 2-chloromethyl-1,3-thiaselenole in 95% yield.

