

## Contents

Special Issue: F.A. Cotton Memorial Issue

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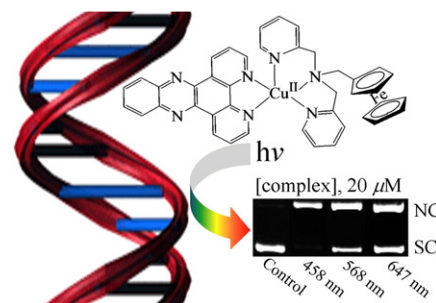
### Communications

**Basudev Maity, Mithun Roy,  
Akhil R. Chakravarty**

*J. Organomet. Chem. 693 (2008) 1395*

Ferrocene-conjugated copper(II) dipyrrophenazine complex as a multifunctional model nuclease showing DNA cleavage in red light

The ferrocene-conjugated copper(II) dipyrrophenazine complex as a multifunctional model nuclease shows efficient chemical nuclease and unprecedented photo-induced DNA cleavage activity in red light following a photo-redox pathway that involves formation of hydroxyl radicals as the cleavage active species.

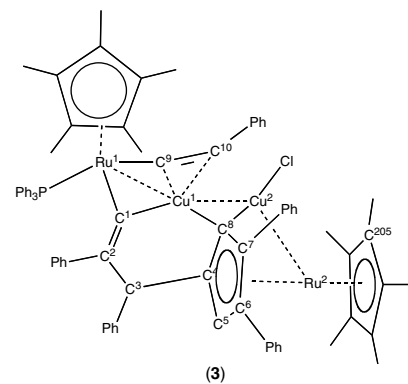


**Michael I. Bruce, Natasha N. Zaitseva,  
Brian W. Skelton, Allan H. White**

*J. Organomet. Chem. 693 (2008) 1400*

An unusual  $\text{Cu}_2\text{Ru}_2$  cluster containing a tetrameric phenylethynyl ligand

The reaction between  $\text{RuCl}(\text{PPh}_3)_2\text{Cp}^*$  and  $\{\text{Cu}(\text{CCPh})\}_n$  in refluxing benzene afforded  $\text{Ru}_2\text{Cu}_2(\text{C}_2\text{Ph})_5\text{H}_2(\text{Cl})(\text{PPh}_3)\text{Cp}^*_2$ , which contains an unusual tetramer of the phenylethynyl group which interacts with an  $\text{Ru}-\text{Cu}-\text{Cu}\dots$   $\text{Ru}$  chain. The second  $\text{Ru}$  atom is part of a ruthenocenyl moiety which interacts weakly with the second  $\text{Cu}$  atom, and bears a vinylidene which bridges an  $\text{Ru}-\text{Cu}$  vector.



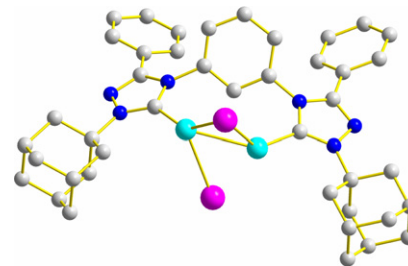
### Regular Papers

**Arthur V. Knishevitsky, Nikolai I. Korotkikh,  
Alan H. Cowley, Jennifer A. Moore,  
Tatyana M. Pekhtereva, Oles P. Shvaika,  
Gregor Reeske**

*J. Organomet. Chem. 693 (2008) 1405*

Copper(I) halide complexes of the new 4,4'-bridged heteroaromatic biscarbene ligands of the 1,2,4-triazole series

Copper(I) chloride and copper(I) iodide complexes of a new 4,4'-bridged heteroaromatic biscarbene ligand have been prepared. The copper(I) iodide complex has been structurally characterized.

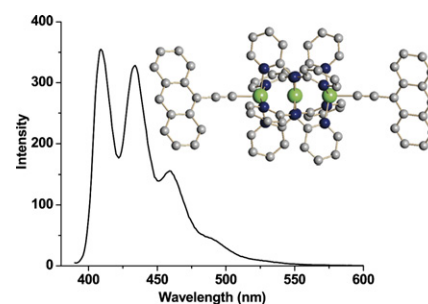


**F. Albert Cotton, Hui Chao, Zhong Li,  
Carlos A. Murillo, Qingsheng Wang**

*J. Organomet. Chem. 693 (2008) 1412*

Effect of axial anthracene ligands on the luminescence of trinickel molecular wires

Two EMACs having the formulas  $\text{Ni}_3(\text{dpa})_4\text{L}_2$  where L is an anthracenyl derivative (AnCC (1) and  $\text{AnCO}_2$  (2)) have very different luminescence behavior because of the relative orientation of the axial ligands L. Compound 1 is strongly luminescent while 2 is not luminescent.

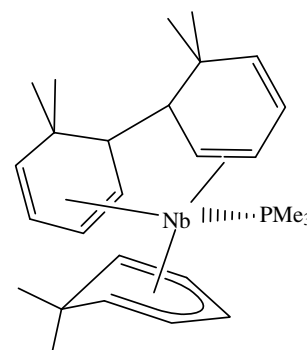


**Benjamin G. Harvey, Rehan Basta,  
Atta M. Arif, Richard D. Ernst**

*J. Organomet. Chem. 693 (2008) 1420*

Reactions of the 6,6-dimethylcyclohexadienyl anion with  $\text{MCl}_4(\text{PMe}_3)_2$  complexes (M = Hf, Nb) – Isolation of complex intramolecular coupling products

The reactions of the  $\text{MCl}_4(\text{PMe}_3)_2$  (M = Nb, Hf) complexes with four equivalents of K(6,6-dmch) (dmch = dimethylcyclohexadienyl) lead to complexes with the stoichiometries  $\text{Nb}(\text{6,6-dmch})_3(\text{PMe}_3)$  and  $\text{Hf}(\text{6,6-dmch})_4(\text{PMe}_3)$ . In each case, only one simple 6,6-dmch ligand remains, while the others have undergone intramolecular couplings, leading to crystallographically characterized complexes with 18 electron configurations.

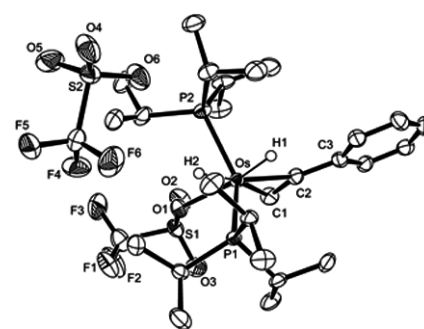


**Joo-Ho Lee, Maren Pink, Yegor D. Smurnyy,  
Kenneth G. Caulton**

*J. Organomet. Chem. 693 (2008) 1426*

Mechanism of alkyne conversion to carbyne by 14- or 16-electron  $\text{Os}(\text{H})_2\text{Cl}_2\text{X}$  (L =  $\text{P}^t\text{Pr}_3$ ; X = OTf or  $\text{B}(\text{C}_6\text{H}_3(\text{CF}_3)_2)_4$ )

The mechanism of conversion of terminal alkynes  $\text{RC}\equiv\text{CH}$  to coordinated carbyne  $\text{Os}\equiv\text{CCH}_2\text{R}$  by  $\text{Os}(\text{H})_2\text{Cl}_2\text{X}$  (L =  $\text{P}^t\text{Pr}_3$ ) has been studied for X = OTf and  $\text{BAr}^{\text{F}}_4$  ( $\text{Ar}^{\text{F}} = 3,5\text{-di}(\text{CF}_3)_2\text{C}_6\text{H}_3$ ). Ready loss of these X makes possible detection of  $\eta^2\text{-RCCH}$  (4-electron donor) and  $\equiv\text{CH}(\text{CH}_2\text{R})$  intermediates, and D-labeling (RCCD) gives  $\text{OsDCIX}(\text{CCH}_2\text{R})\text{L}_2$ . The energy of various intermediates, including the only experimentally unobserved one,  $\eta^2\text{-vinyl}$ , was evaluated with DFT(PBE) calculations.

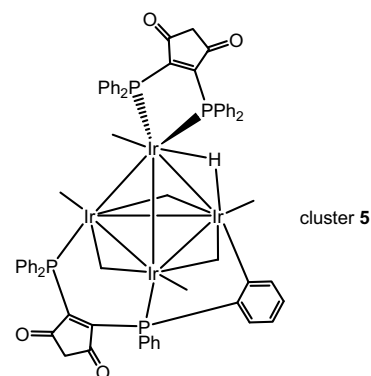


**William H. Watson, Guanmin Wu,  
Michael G. Richmond**

*J. Organomet. Chem. 693 (2008) 1439*

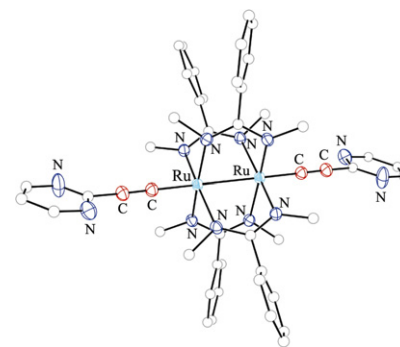
Diphosphine ligand chelation and bridging and regiospecific ortho metalation in the reaction of 4,5-bis(diphenylphosphino)-4-cyclopenten-1,3-dione (bpcd) with  $\text{Ir}_4(\text{CO})_{12}$ : X-ray diffraction structures of  $\text{Ir}_4(\text{CO})_7(\mu\text{-CO})_3(\text{bpcd})$  (3),  $\text{Ir}_4(\text{CO})_5(\mu\text{-CO})_3(\text{bpcd})(\mu\text{-bpcd})$  (4), and  $\text{HIr}_4(\text{CO})_4(\mu\text{-CO})_3(\text{bpcd})[\mu\text{-PhP}(\text{C}_6\text{H}_4)\text{C}=\text{C}(\text{PPh}_2)\text{C}(\text{O})\text{CH}_2\text{C}(\text{O})]$

The reactivity of the tetrairidium clusters  $\text{Ir}_4(\text{CO})_{12}$  and  $[\text{Ir}_4(\text{CO})_{11}\text{Br}][\text{Et}_4\text{N}]$  with the unsaturated diphosphine ligand 4,5-bis(diphenylphosphino)-4-cyclopenten-1,3-dione (bpcd) has been investigated. The simple substitution products  $\text{Ir}_4(\text{CO})_7(\mu\text{-CO})_3(\text{bpcd})$  (3) and  $\text{Ir}_4(\text{CO})_5(\mu\text{-CO})_3(\text{bpcd})(\mu\text{-bpcd})$  (4) have been isolated and the coordination mode adopted by the bpcd ligand(s) established by X-ray crystallography. Facile loss of a CO group in cluster 4 is accompanied by ortho metalation of one of the aryl rings in the bridging bpcd ligand and formation of the hydride-bridged cluster  $\text{HIr}_4(\text{CO})_4(\mu\text{-CO})_3(\text{bpcd})[\mu\text{-PhP}(\text{C}_6\text{H}_4)\text{C}=\text{C}(\text{PPh}_2)\text{C}(\text{O})\text{CH}_2\text{C}(\text{O})]$  (5).

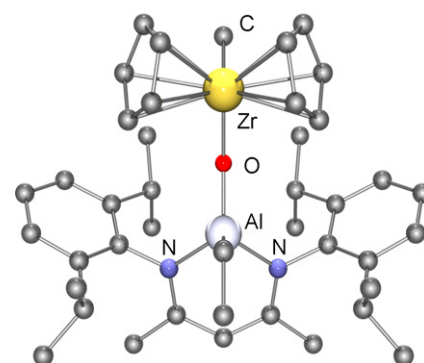
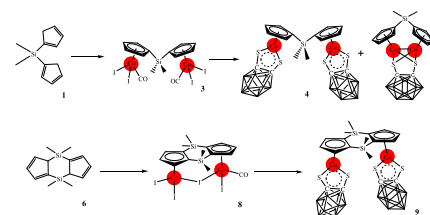


**Jie-Wen Ying, Tong Ren***J. Organomet. Chem.* 693 (2008) 1449

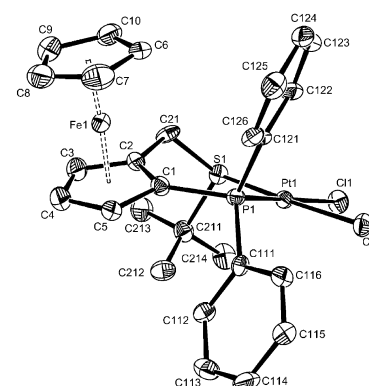
Diruthenium compounds of heterocycle-containing acetylides

Reported herein are the synthesis, electrochemical and structural characterization of  $\text{Ru}_2(\text{DMBA})_4(\text{C}\equiv\text{CAR})_2$  type compounds with Ar as pyrimidine or *N*-methylpyridinium.**Ying Yang, Prabhudeyara M. Gurubasavaraj, Hongqi Ye, Zhensheng Zhang, Herbert W. Roesky, Peter G. Jones***J. Organomet. Chem.* 693 (2008) 1455

Synthesis, structural characterization, and reactivity of the ethyl substituted aluminum hydroxide and catalytic properties of its derivative

LAIEt(OH) (**2**; L = HC[C(Me)N(Ar)]<sub>2</sub>; Ar = 2,6-*i*Pr<sub>2</sub>C<sub>6</sub>H<sub>3</sub>) was synthesized by controlled hydrolysis of LAIEtCl (**1**). Treatment of **2** with Cp<sub>2</sub>ZrMe<sub>2</sub> and Cp<sub>3</sub>M afforded heterobimetallic oxides LAIEt(μ-O)ZrMeCp<sub>2</sub> (**3**) and LAIEt(μ-O)M(THF)Cp<sub>2</sub> (M = Yb, **4**; Er, **5**; Dy, **6**; Y, **7**). Compound **3** exhibits good catalytic activity in ethylene polymerization.**Xiu-Feng Hou, Peng-Cheng Zhang, Shu Liu, Hui Wang, Yue-Jiang Lin, Guo-Xin Jin***J. Organomet. Chem.* 693 (2008) 1462Synthesis and structures of binuclear half-sandwich cobalt (III) *ortho*-carboranedithiolato complexes with silyl-bridged bis(cyclopentadienyl) ligandsFive binuclear half-sandwich cobalt complexes, [(η<sup>5</sup>-C<sub>5</sub>H<sub>4</sub>)Co(CO)I<sub>2</sub>SiMe<sub>2</sub> (**3**), [(η<sup>5</sup>-C<sub>5</sub>H<sub>4</sub>)Co(S<sub>2</sub>C<sub>2</sub>B<sub>10</sub>H<sub>10</sub>)<sub>2</sub>SiMe<sub>2</sub> (**4**), [(η<sup>5</sup>-C<sub>5</sub>H<sub>4</sub>)<sub>2</sub>Co<sub>2</sub>(μ<sub>2</sub>-S<sub>2</sub>C<sub>2</sub>B<sub>10</sub>H<sub>10</sub>)SiMe<sub>2</sub> (**5**), [(η<sup>5</sup>-C<sub>5</sub>H<sub>3</sub>)CoI<sub>2</sub>-(μ-I)[(η<sup>5</sup>-C<sub>5</sub>H<sub>3</sub>)Co(CO)I](SiMe<sub>2</sub>)<sub>2</sub> (**8**), [(η<sup>5</sup>-C<sub>5</sub>H<sub>3</sub>)-Co(S<sub>2</sub>C<sub>2</sub>B<sub>10</sub>H<sub>10</sub>)<sub>2</sub>(SiMe<sub>2</sub>)<sub>2</sub> (**9**), with two different silyl-bridged bis(cyclopentadienyl) ligands, were synthesized and characterized structurally.**Raluca Malacea, Lucie Routaboul, Eric Manoury, Jean-Claude Daran, Rinaldo Poli***J. Organomet. Chem.* 693 (2008) 1469

Palladium and platinum complexes with planar chiral 1,2-disubstituted ferrocenes containing phosphine and thioether donor groups

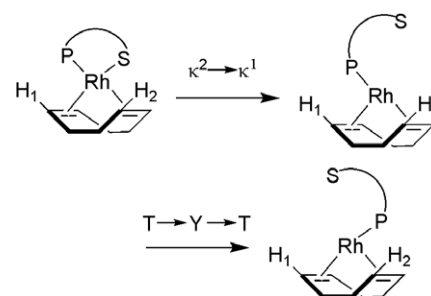
Coordination of bidentate ferrocenyl phosphine-thioether ligands to PdCl<sub>2</sub> and PtCl<sub>2</sub> leads to a single diastereoisomer in each case. The planar chirality of the ferrocene moiety exerts a perfect control on the chirality of the coordinated sulphur atom.

**J.W. Faller, Suzanna C. Milheiro,  
Jonathan Parr**

*J. Organomet. Chem.* 693 (2008) 1478

Hemilability and nonrigidity in metal complexes of bidentate  $P,P=S$  donor ligands

Hemilability and nonrigidity in a series of mixed  $P,P=S$  donor ligands has been studied in the complexes  $[\text{Pd}(P,P=S)\text{Cl}_2]$ ,  $[\text{Pd}(\eta^3\text{-C}_3\text{H}_5)(P,P=S)][\text{SbF}_6]$ , and  $[\text{Rh}(\text{cod})(P,P=S)][\text{SbF}_6]$  ( $P,P=S = \text{Ph}_2\text{P-Q-P(S)Ph}_2$ ). The effect of bite angle, the rigidity of the ligand backbone, and the role of the ancillary ligands are discussed.

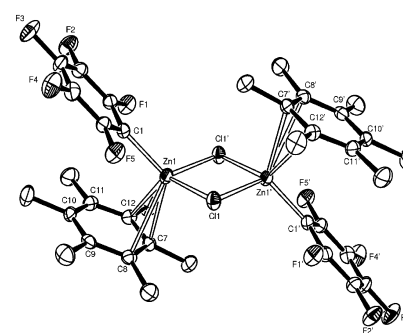


**Yann Sarazin, Joseph A. Wright,  
Duncan A.J. Harding, Eddy Martin,  
Timothy J. Woodman, David L. Hughes,  
Manfred Bochmann**

*J. Organomet. Chem.* 693 (2008) 1494

Synthesis and structures of new binuclear zinc alkyl, aryl and aryloxo complexes

Binuclear zinc complexes with chloro-, amido and aryloxo bridges are reported in which the metal is three-, four- or five-coordinate. Examples include the hexamethylbenzene complex  $[\text{Zn}(\mu\text{-Cl})(\text{C}_6\text{F}_5)(\eta\text{-C}_6\text{Me}_6)]_2$ .

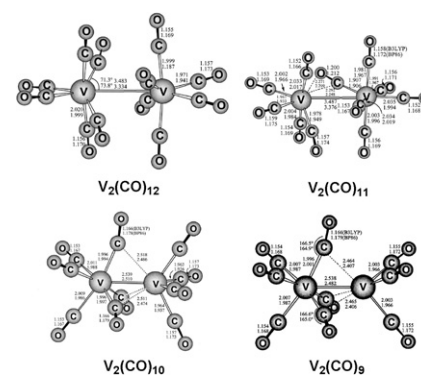


**R. Bruce King, H.F. Schaefer, Zhaohui Liu,  
Qian-Shu Li, Yaoming Xie**

*J. Organomet. Chem.* 693 (2008) 1502

The oxophilicity of vanadium in unsaturated homoleptic binuclear vanadium carbonyl structures

Density functional theory has been used to explore possible homoleptic binuclear vanadium carbonyls  $\text{V}_2(\text{CO})_n$  ( $n = 12, 11, 10, 9$ , and 8) with the pure DFT method BP86.

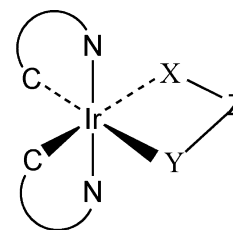


**Wu-Sian Sie, Jing-Yu Jian, Tzu-Chih Su,  
Gene-Hsiang Lee, Hon Man Lee, Kom-Bei Shiu**

*J. Organomet. Chem.* 693 (2008) 1510

Synthesis, structures, and properties of iridium(III) bis-cyclometallated complexes containing three-atom chelates

Eight bis-cyclometallated ( $\text{C}^2\text{N}$ ) iridium(III) complexes containing three-atom chelates ( $\text{XZY}$ ),  $[\text{Ir}(\eta^2\text{-ppy})_2(\eta^2\text{-XZY})]$  ( $\text{XZY}^- = \text{NO}_3^-$ , deprotonated anions of 2-mercapto-pyridine, 6-methyl-2-hydroxypyridine, 6-chloro-2-hydroxypyridine, acetic acid, benzoic acid, 2-methylacrylic acid, and 1,1,1-trimethylacetic acid) have been synthesized and fully characterized with some structures determined by X-ray diffraction. Both photoluminescence and electrochemical behavior of the green-emitting complexes are also studied.

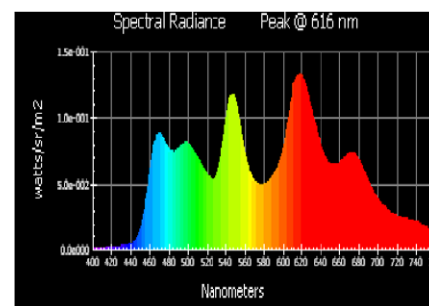


**Xiao-Ming Yu, Gui-Jiang Zhou,  
Ching-Shan Lam, Wai-Yeung Wong,  
Xiu-Ling Zhu, Jia-Xin Sun, Man Wong,  
Hoi-Sing Kwok**

*J. Organomet. Chem.* 693 (2008) 1518

A yellow-emitting iridium complex for use in phosphorescent multiple-emissive-layer white organic light-emitting diodes with high color quality and efficiency

A white organic light-emitting diode (WOLED) consisting of multiple-emissive-layer structure was realized by combining an efficient yellow-emitting iridium complex of fluorenylpyridine with red, green and blue phosphors for color mixing. The device shows an excellent color stability with high and stable color rendering index. The peak WOLED efficiencies can reach 13.0% ph/el, 24.6 cd/A and 12.4 lm/W, respectively.

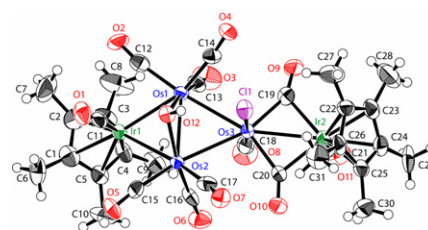


**Yui-Bing Lee, Wing-Tak Wong**

*J. Organomet. Chem.* 693 (2008) 1528

New triosmium-iridium clusters: Synthesis and molecular structure of  $[\text{Os}_3\text{Ir}_2(\text{Cp}^*)_2(\mu\text{-OH})(\mu\text{-CO})_2(\text{CO})_8\text{Cl}]$  (**1**),  $[\text{Os}_3\text{IrCp}^*(\mu\text{-OH})(\text{CO})_{10}\text{Cl}]$  (**2**),  $[\text{Os}_3\text{IrCp}^*(\mu\text{-H})(\mu\text{-Cl})(\eta^3\text{-}\mu_3\text{-C}_5\text{H}_2\text{N}(\text{NH}_2)\text{Br})(\text{CO})_9]$  (**3**) and  $[\text{Os}_3\text{IrCp}^*(\mu\text{-Cl})_2(\eta^2\text{-}\mu_3\text{-C}_5\text{H}_3\text{N}(\text{NH})\text{Br})(\text{CO})_7]$  (**4**)

Two new osmium-iridium clusters have been synthesized by reaction between  $[\text{Os}_3(\text{CO})_{10}(\text{MeCN})_2]$  and  $[\text{IrCp}^*\text{Cl}_2]_2$ ,  $[\text{Os}_3\text{Ir}_2(\text{Cp}^*)_2(\mu\text{-OH})(\mu\text{-CO})_2(\text{CO})_8\text{Cl}]$  (**1**) and  $[\text{Os}_3\text{IrCp}^*(\mu\text{-OH})(\text{CO})_{10}\text{Cl}]$  (**2**). By adding a pyridyl ligand, another two new clusters were afforded with different coordination of the ligand,  $[\text{Os}_3\text{IrCp}^*(\mu\text{-H})(\mu\text{-Cl})(\eta^3\text{-}\mu_3\text{-C}_5\text{H}_2\text{N}(\text{NH}_2)\text{Br})(\text{CO})_9]$  (**3**) and  $[\text{Os}_3\text{IrCp}^*(\mu\text{-Cl})_2(\eta^2\text{-}\mu_3\text{-C}_5\text{H}_3\text{N}(\text{NH})\text{Br})(\text{CO})_7]$  (**4**).

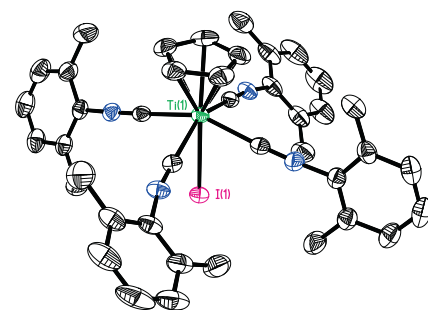


**Jessica M. Allen, John E. Ellis**

*J. Organomet. Chem.* 693 (2008) 1536

Synthesis and characterization of titanium tetracyanide complexes,  $[\text{CpTi}(\text{CNXyl})_4\text{E}]$ ,  $\text{E} = \text{I}, \text{SnPh}_3, \text{and SnMe}_3$

Oxidation of the  $\text{Ti}(0)$  carbonyl anion  $[\text{CpTi}(\text{CO})_4]^-$  with  $\text{I}_2$ ,  $\text{Ph}_3\text{SnCl}$ , and  $\text{Me}_3\text{SnCl}$  in the presence of four equivalents of  $\text{CNXyl}$ , where  $\text{Xyl} = 2,6\text{-dimethylphenyl}$ , affords the first examples of titanium tetracyanides,  $[\text{CpTi}(\text{CNXyl})_4\text{E}]$ ,  $\text{E} = \text{I}, \text{SnPh}_3, \text{SnMe}_3$ , which have been characterized by IR and NMR spectroscopy and single-crystal X-ray crystallography. Previously only mono- and bis-isocyanide complexes of the group 4 elements were known.

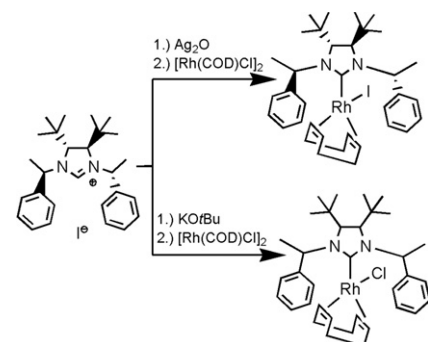


**Sandra C. Zinner, Wolfgang A. Herrmann,  
Fritz E. Kühn**

*J. Organomet. Chem.* 693 (2008) 1543

Synthesis and characterization of asymmetric NHC complexes

The syntheses of new NHC rhodium complexes are described. The reaction of  $[\text{Rh}(\text{COD})\text{Cl}]_2$  with the free carbene leads to a non-chiral complex, while via transmetalation the chirality of the ligand is preserved.

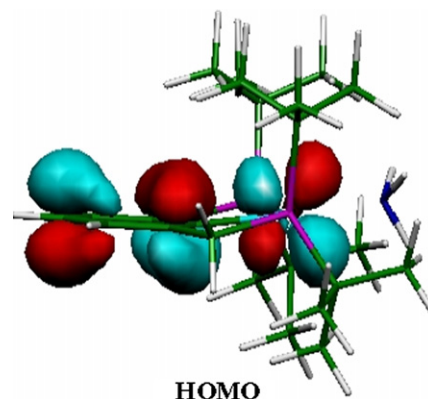


**Bruce E. Bursten, Shentan Chen,  
Malcolm H. Chisholm**

*J. Organomet. Chem.* 693 (2008) 1547

Ligand effects on the stability of the insertion products: A DFT study of oxidative addition of  $\text{NH}_3$  to iridium(I) complex

The study of the substituent effects employing the density functional theory (DFT) has shown us that the oxidative addition of ammonia by an iridium complex to form a hydrido amido complex can be achieved by increasing the electron donating ability of the PCP ligand since the ligand with a better electron donating ability stabilizes the insertion compound relative to the coordination compound.

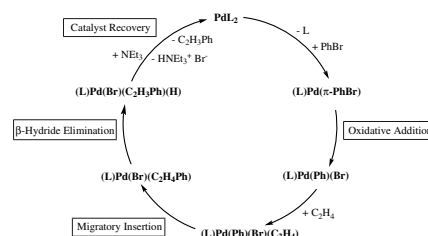


**Panida Surawatanawong, Yubo Fan,  
Michael B. Hall**

*J. Organomet. Chem.* 693 (2008) 1552

Density functional study of the complete pathway for the Heck reaction with palladium diphosphines

Density functional calculations demonstrate that in the Heck reaction catalyzed by Pd phosphines Pd  $\pi$ -complexes can be formed with phenyl bromide and ethylene before oxidative addition. All reaction paths for the oxidative addition lead to palladium monophosphine as the active catalyst. For the rest of the Heck reaction, the neutral path is preferred to the cationic path (early loss of  $\text{Br}^-$ ).

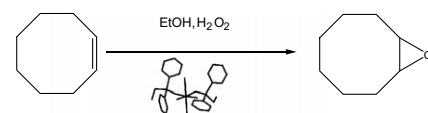


**Linsheng Feng, Eugenijus Urnezisus,  
Rudy L. Luck**

*J. Organomet. Chem.* 693 (2008) 1564

Cyclooctene epoxidation with  $\text{H}_2\text{O}_2$  and single crystal X-ray determined crystal structures of new molybdenum and tungsten catalysts bearing the hydrophilic ligand hydroxymethyl-diphenylphosphine oxide

Dioxo molybdenum and tungsten complexes containing hydrophilic phosphine oxide ligands, have been synthesized and characterized by FT-IR,  $^1\text{H}$ ,  $^{31}\text{P}$  NMR and by single crystal X-ray diffraction. The complexes showed good activity and very high selectivity for the formation of cyclooctene oxide in ethanol in the presence of hydrogen peroxide.



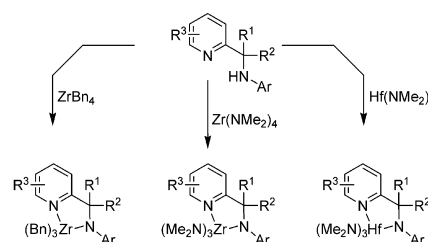
**Katrin Nienkemper, Gerald Kehr, Seda Kehr,  
Roland Fröhlich, Gerhard Erker**

*J. Organomet. Chem.* 693 (2008) 1572

(Amidomethyl)pyridine zirconium and hafnium complexes: Synthesis and structural characterization

A series of substituted *N*-arylaminoalkylpyridine derivatives were synthesized and used as ligands for (chelate ligand) $\text{MX}_3$  systems ( $\text{M} = \text{Zr}, \text{Hf}$ ). 2-Formyl and 2-acetylpyridines were condensed with 2,6-diisopropylaniline to yield the corresponding imines. Their reaction with sodium

borohydride gave the respective *N*-arylamino-methylpyridines. Treatment of the *N*-arylformimino- or -acetiminopyridines with trimethylaluminum followed by hydrolysis furnished a series of the respective chelate ligands. Their reaction with tetrabenzylzirconium or tetrakis(dimethylamido)zirconium or -hafnium gave the corresponding complex systems in a variety of cases. Some of these gave very active ethene polymerization catalysts upon activation with methylalumoxane. Six of the neutral aminoalkylpyridines were characterized by X-ray diffraction, as were eight of the zirconium or hafnium complexes and two aluminum chelate complex systems.

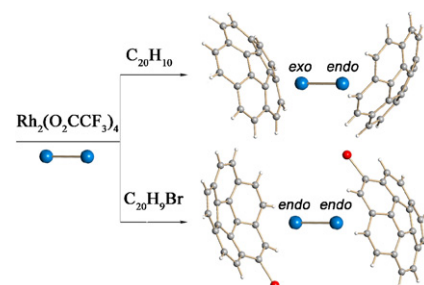


**Alexander S. Filatov, Marina A. Petrukhina**

*J. Organomet. Chem.* 693 (2008) 1590

Gas phase synthesis and X-ray crystal structures of supramolecular networks with bromocorannulene: Similarities and differences with their corannulene analogs

The reactivity of mono-bromocorannulene ( $C_{20}H_9Br$ ) has been examined and compared with that of corannulene ( $C_{20}H_{10}$ ) in binding reactions with the avid Lewis acidic dimetal complex ( $Rh_2(O_2CCF_3)_4$ ).

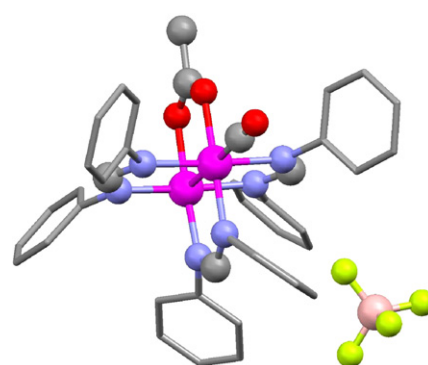


**M. Carmen Barral, Santiago Herrero, Reyes Jiménez-Aparicio, M. Rosario Torres, Francisco A. Urbanos**

*J. Organomet. Chem.* 693 (2008) 1597

Carbonyl and nitrosyl diruthenium compounds: Crystal structure of  $[Ru_2(O_2CMe)(DPhF)_3(CO)]BF_4 \cdot CH_2Cl_2$  and its isomorphous nitrosyl analogue

The first carbonyl complex containing a  $Ru_2^{5+}$  unit  $[Ru_2(O_2CMe)(DPhF)_3(CO)]BF_4$  (**1**) and the nitrosyl analogue  $[Ru_2(O_2CMe)(DPhF)_3(NO)]BF_4$  (**2**), have been isolated. The structure of the dichloromethane solvate of complexes **1** and **2** is described and shows that both compounds are isomorphous.

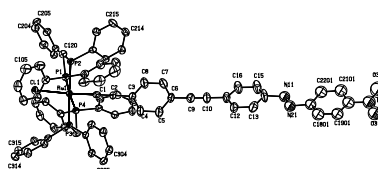


**Timothy N. Fondum, Katy A. Green, Michael D. Randles, Marie P. Cifuentes, Anthony C. Willis, Ayele Teshome, Inge Asselberghs, Koen Clays, Mark G. Humphrey**

*J. Organomet. Chem.* 693 (2008) 1605

Organometallic complexes for nonlinear optics. 41: Syntheses and quadratic NLO properties of 4-{4-(4-nitrophenyl)diazophenyl}-ethynylphenylethynyl complexes

The syntheses of several complexes incorporating 4-{4-(4-nitrophenyl)diazophenyl}-ethynylphenylethynyl or 4-(4-nitrophenyl)diazophenylethynyl ligands are reported; hyper-Rayleigh scattering studies at 1.064  $\mu m$  and 1.300  $\mu m$  reveal that quadratic nonlinearities increase on introduction of azo group and  $\pi$ -system lengthening.

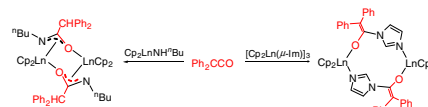


**Ruiting Liu, Pengzhi Zheng, Linhong Weng, Xigeng Zhou, Chunyuan Liu**

*J. Organomet. Chem.* 693 (2008) 1614

Insertion of ketenes into lanthanocene *n*-butylamide and imidazolate complexes

Reaction of  $Cp_2LnNH^tBu$  with  $Ph_2CCO$  affords dimeric complexes  $[Cp_2Ln(OC(CHPh_2)N^tBu)]_2$  [ $Ln = Yb, Dy$ ], derived from a formal insertion of the  $C=C$  bond of the ketene into the  $N-H$  bond. Treatment of  $[Cp_2Ln(\mu-Im)]_3$  ( $Im = imidazolate$ ) with  $PhRCCO$  gives  $[Cp_2Ln(\mu-OC(Im) = CPhR)]_2$  [ $R = Et, Ln = Yb$ ;  $R = Ph, Ln = Yb, Er$ ].



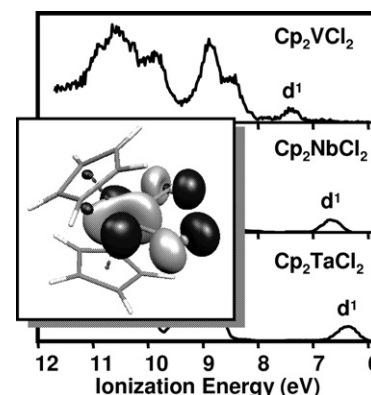
**Matthew A. Cranswick, Nadine E. Gruhn,  
John H. Enemark, Dennis L. Lichtenberger**

*J. Organomet. Chem. 693 (2008) 1621*

Electronic structure of the  $d^1$  bent-metallocene  $\text{Cp}_2\text{VCl}_2$ : A photoelectron and density functional study

The  $\text{Cp}_2\text{VCl}_2$  molecule is a prototype for  $d^1$  bent-metallocene complexes, but experimental measure of the binding energy of the  $d$  electron by photoelectron spectroscopy eluded early

attempts due to apparent decomposition in the spectrometer. With improved instrumentation, the amount of decomposition is reduced, and subtraction of ionization intensity due to  $\text{Cp}_2\text{VCl}$  from the  $\text{Cp}_2\text{VCl}_2/\text{Cp}_2\text{VCl}$  mixed spectrum yields the  $\text{Cp}_2\text{VCl}_2$  spectrum exclusively. The measured ionization energies provide well-defined benchmarks for electronic structure calculations. Density functional calculations support the spectral interpretations and agree well with the ionization energy of the  $d^1$  electron and the energies of the higher positive ion states of  $\text{Cp}_2\text{VCl}_2$  and account well for the trends to the other Group V bent-metallocene dichlorides.

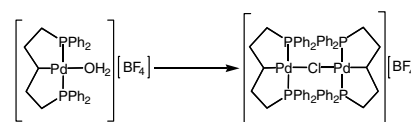


**Kian Eang Neo, Han Vinh Huynh, Lip Lin Koh,  
William Henderson, T.S. Andy Hor**

*J. Organomet. Chem. 693 (2008) 1628*

Isolation and crystallographic characterization of solvate- and anion-stabilized PCP pincer complexes of palladium(II)

Mononuclear Pd(II) PCP complexes  $[\text{PdL}(\text{PCP})][\text{X}]$  ( $\text{PCP} = \text{CH}(\text{CH}_2\text{CH}_2\text{PPh}_2)_2$ ;  $\text{L} = \text{NO}_3$ , no X;  $\text{H}_2\text{O}$ ,  $\text{X} = \text{BF}_4$ ) with labile ligands and the singly bridging dinuclear complex  $[\{\text{Pd}(\text{PCP})\}_2(\mu\text{-Cl})][\text{BF}_4]$  have been isolated and structurally characterized by single-crystal X-ray diffraction. The representative triflate complex and its precursor are catalytically active towards Suzuki–Miyaura coupling of selected aryl bromides.

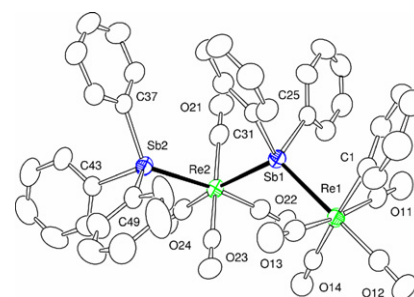


**Richard D. Adams, Burjor Captain,  
William C. Pearl Jr.**

*J. Organomet. Chem. 693 (2008) 1636*

Facile cleavage of a phenyl group from  $\text{SbPh}_3$  by dirhenium carbonyl complexes

A series of mono- and dirhenium complexes containing  $\sigma$ -bonded phenyl groups have been obtained from the reaction of  $\text{Re}_2(\text{CO})_8[\mu\text{-}\eta^2\text{-C(H)=C(H)Bu}^n](\mu\text{-H})$  (**1**) and  $\text{Re}_2(\text{CO})_{10}$  with  $\text{SbPh}_3$ .

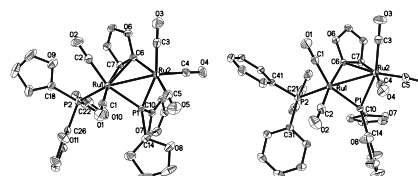


**Noorjahan Begum, Mohammad A. Rahman,  
Mohammad R. Hassan, Derek A. Tocher,  
Ebbe Nordlander, Graeme Hogarth,  
Shariff E. Kabir**

*J. Organomet. Chem. 693 (2008) 1645*

Reaction of  $[\text{Ru}_3(\text{CO})_{12}]$  with tri(2-furyl)phosphine: Di- and tri-substituted triruthenium and phosphido-bridged diruthenium complexes

The triruthenium complexes  $[\text{Ru}_3(\text{CO})_{10}\{\text{P}(\text{C}_4\text{H}_3\text{O})_3\}_2]$  (**1**) and  $[\text{Ru}_3(\text{CO})_9\{\text{P}(\text{C}_4\text{H}_3\text{O})_3\}_3]$  (**2**) are obtained from  $\text{Na}[\text{Ph}_2\text{CO}]$  initiated reaction of  $[\text{Ru}_3(\text{CO})_{12}]$  with tri(2-furyl)phosphine,  $\text{P}(\text{C}_4\text{H}_3\text{O})_3$  at room temperature. Treatment of **1** and **2** with  $\text{Me}_3\text{NO}$  at  $40^\circ\text{C}$  affords the dinuclear phosphido-bridged complexes  $[\text{Ru}_2(\text{CO})_6(\mu\text{-}\eta^1, \eta^2\text{-C}_4\text{H}_3\text{O})\{\mu\text{-P}(\text{C}_4\text{H}_3\text{O})_2\}]$  (**3**) and  $[\text{Ru}_2(\text{CO})_5(\mu\text{-}\eta^1, \eta^2\text{-C}_4\text{H}_3\text{O})\{\mu\text{-P}(\text{C}_4\text{H}_3\text{O})_2\}\{\text{P}(\text{C}_4\text{H}_3\text{O})_3\}]$  (**4**), respectively. The reactivity of (**3**) with  $\text{PPh}_3$ ,  $\text{AsPh}_3$ ,  $\text{SbPh}_3$ ,  $\text{P}(\text{C}_4\text{H}_3\text{O})_3$ ,  $\text{P}(\text{OMe})_3$  and  $\text{Bu}'\text{NC}$  are described.



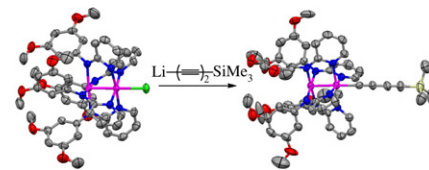


**Bin Xi, Guo-Lin Xu, Jie-Wen Ying,  
Hong-Ling Han, Antoinette Cordova, Tong Ren**

*J. Organomet. Chem.* 693 (2008) 1656

Further molecular engineering of diruthenium-(2-anilinopyridinate) alkynyl compounds through ligand design

Synthesis and characterization of soluble diruthenium alkynyl compounds based on DiMeOap ligand are presented.

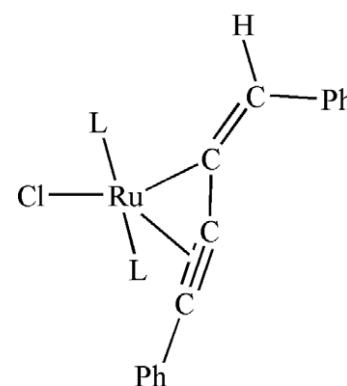


**Joo-Ho Lee, Kenneth G. Caulton**

*J. Organomet. Chem.* 693 (2008) 1664

Coupling of terminal alkynes by  $\text{RuHXL}_2$   
( $X = \text{Cl}$  or  $\text{N}(\text{SiMe}_3)_2$ ,  $L = \text{P}^i\text{Pr}_3$ )

Carbonyl free  $\text{RuHCl}(\text{P}^i\text{Pr}_3)_2$  is studied for its ability to catalytically dimerize  $\text{RC}\equiv\text{CH}$  to enynes and cumulenes.

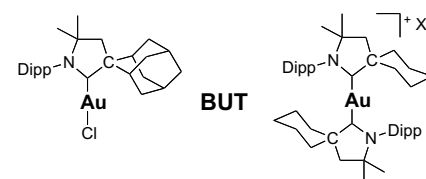


**Guido D. Frey, Rian D. Dewhurst,  
Shazia Kousar, Bruno Donnadieu,  
Guy Bertrand**

*J. Organomet. Chem.* 693 (2008) 1674

Cyclic (alkyl)(amino)carbene gold(I) complexes: A synthetic and structural investigation

The steric hindrance and the flexibility of the carbene carbon substituents of CAACs have a dramatic effect on the synthetic outcome of the complexation reactions at gold centers.

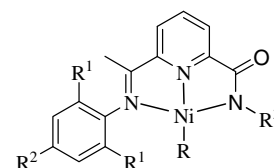


**Miao Shen, Peng Hao, Wen-Hua Sun**

*J. Organomet. Chem.* 693 (2008) 1683

Synthesis, characterization and catalytic behaviors of neutral nickel complexes: Arylnickel *N*-alkyl-6-(1-(arylimino)ethyl)picolinamide

A series of novel neutral nickel complexes, aryl (phenyl or naphthyl) nickel *N*-alkyl-6-(1-(arylimino)ethyl)picolinamides, were synthesized and characterized by NMR, IR spectroscopic and elemental analysis. The single-crystal X-ray crystallographic analyses revealed the complexes **C2**, **C3** and **C7** with the distorted square-planar geometry. On activation with diethylaluminum chloride ( $\text{Et}_2\text{AlCl}$ ), the nickel complexes exhibited moderate catalytic activities for ethylene oligomerization. Moreover, these complexes also performed moderate activity for polymerization of methyl methacrylate and Kumada–Corriu reaction.



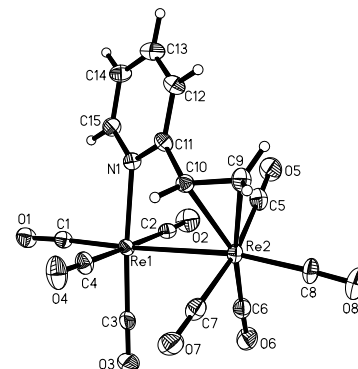
## Notes

**Shariff E. Kabir, Faruque Ahmed,  
Anamika Das, Mohammad R. Hassan,  
Daniel T. Haworth, Sergey V. Lindeman,  
Tasneem A. Siddiquee, Dennis W. Bennett**

*J. Organomet. Chem.* 693 (2008) 1696

Dirhenium carbonyl complexes bearing 2-vinylpyridine, morpholine and 1-methylimidazole ligands

The synthesis and characterization of the dirhenium complexes  $[\text{Re}_2(\text{CO})_8(\mu\text{-}\eta^1\text{:}\eta^2\text{-NC}_3\text{H}_4\text{-CH=CH}_2)]$  (**1**),  $[\text{Re}_2(\text{CO})_9(\eta^1\text{-NC}_4\text{H}_9\text{O})]$  (**2**),  $[\text{Re}_2(\text{CO})_8(\eta^1\text{-NC}_4\text{H}_9\text{O})_2]$  (**3**) and  $[\text{Re}_2(\text{CO})_8\{\eta^1\text{-NC}_3\text{H}_3\text{N}(\text{CH}_3)\}_2]$  (**4**) and the mononuclear compound *fac*- $[\text{ReCl}(\text{CO})_3\{\eta^1\text{-NC}_3\text{-H}_3\text{N}(\text{CH}_3)\}_2]$  (**5**) are described.

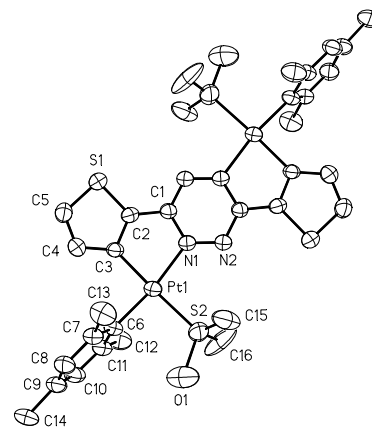


**Biprajit Sarkar, Thilo Schurr,  
Ingo Hartenbach, Thomas Schleid, Jan Fiedler,  
Wolfgang Kaim**

*J. Organomet. Chem.* 693 (2008) 1703

Double cyclometallation of bridging 3,6-bis(2-thienyl)-1,2,4,5-tetrazine in a dinuclear mesityl-(dimethylsulfoxide)platinum(II) complex: Structure and properties

Bttz reacts with *trans*-Pt(dmsO)<sub>2</sub>(mes)<sub>2</sub> under twofold cyclometallation to yield  $(\mu\text{-bttz-2H}^+)[\text{Pt}(\text{dmsO})(\text{mes})_2]$  with uncoordinated thiophene S. Reversible reduction is possible causing a high-energy shift of the charge transfer bands and the emergence of an unresolved EPR signal.

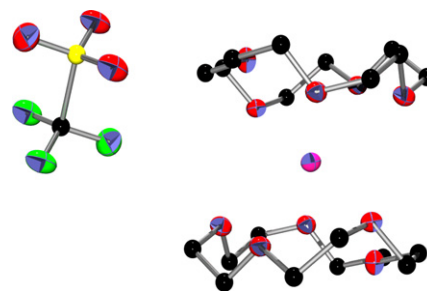


**Benjamin F.T. Cooper,  
Charles L.B. Macdonald**

*J. Organomet. Chem.* 693 (2008) 1707

Synthesis and structure of an indium(I) "crown sandwich"

The reaction of indium(I) trifluoromethanesulfonate, InOTf, with the crown ether 15-crown-5 produces the salt  $[\text{In}(\text{15-crown-5})_2][\text{OTf}]$  regardless of the stoichiometry used. The toluene-soluble In<sup>I</sup> salt has been characterized by single-crystal X-ray diffraction and contains a cation composed of an In<sup>I</sup> center that is "sandwiched" by the two crown ethers.

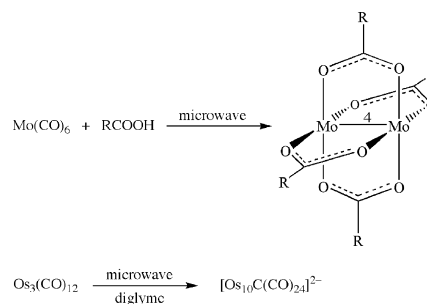


**Kara D. Johnson, Gregory L. Powell**

*J. Organomet. Chem.* 693 (2008) 1712

Microwave-assisted synthesis of dimolybdenum tetracarboxylates and a decanuclear osmium cluster

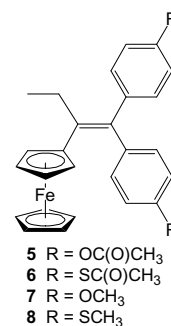
Dimolybdenum(II) tetracarboxylates, Mo<sub>2</sub>(O<sub>2</sub>CR)<sub>4</sub> and the osmium cluster complex  $[\text{Os}_{10}\text{C}(\text{CO})_{24}]^{2-}$  are prepared at very fast rates and in high yields by microwave irradiation of a closed reaction vessel.



**Julia B. Heilmann, Elizabeth A. Hillard,  
Marie-Aude Plamont, Pascal Pigeon,  
Michael Bolte, Gérard Jaouen, Anne Vessières**  
*J. Organomet. Chem.* 693 (2008) 1716

Ferrocenyl compounds possessing protected phenol and thiophenol groups: Synthesis, X-ray structure, and in vitro biological effects against breast cancer

The acetyl-protected ferrocenyl phenol **5** shows antiproliferative effects against hormone-dependent and -independent breast cancer cell lines similar to those of the corresponding free phenol. Exchanging the oxygen for a sulfur atom or the acetyl for a methyl group negates these effects.



**Eva Guillamón, Rosa Llugar,  
Julia Pérez-Prieto, Salah-Eddine Stiriba**  
*J. Organomet. Chem.* 693 (2008) 1723

Insight into the mechanism of diazocompounds transformation catalyzed by hetero cuboidal clusters [Mo<sub>3</sub>CuQ<sub>4</sub>(MeBPE)<sub>3</sub>X<sub>4</sub>]<sup>+</sup>, (Q = S, Se; X = Cl, Br): The catalytically active species

The synthesis of heterodimetallic cubane-type compounds of formula (*P*)-[Mo<sub>3</sub>CuS<sub>4</sub>{(*R,R*)-Me-BPE}<sub>3</sub>Br<sub>4</sub>]PF<sub>6</sub> and (*P*)-[Mo<sub>3</sub>CuSe<sub>4</sub>{(*R,R*)-Me-BPE}<sub>3</sub>Cl<sub>4</sub>]PF<sub>6</sub> is reported. Experimental results on their reactivity in the cyclopropanation reaction of styrene with ethyl diazoacetate suggest that the active catalytic species is formed after temporary breaking of one of the Cu-chalcogen (Q) bonds.

