

Contents

Special Issue: Frontiers in Organometallic Chemistry – 7th JOM Symposium, Boston, MA, USA

Foreword viii

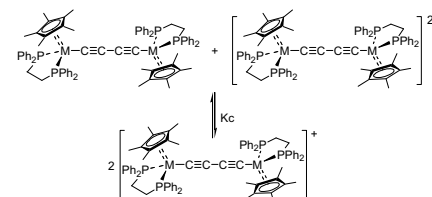
Reviews

Claude Lapinte

J. Organomet. Chem. 693 (2008) 793

Magnetic perturbation of the redox potentials of localized and delocalized mixed-valence complexes

The comproportionation constant (K_c) is larger for $M = Fe$ than for $M = Ru$, but the metal-metal coupling in the mixed-valence states is larger for the $Ru-Ru$ compound than for the $Fe-Fe$ one.

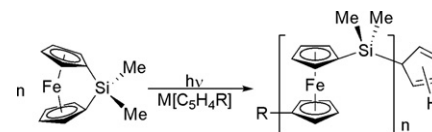


Nga Sze Ieong, Ian Manners

J. Organomet. Chem. 693 (2008) 802

Photoinduced iron-cyclopentadienyl (Fe-Cp) bond cleavage reactions and photocontrolled polymerizations of strained [1]ferrocenophanes

Extensive previous work has shown that strained [1]ferrocenophanes predominantly undergo ring-opening chemistry at the bridging atom E-Cp bond. Recent reports have highlighted that reactivity at the Fe-Cp bond can also occur, especially on photoactivation. We provide an overview of this new area of controlled Fe-Cp bond cleavage chemistry.

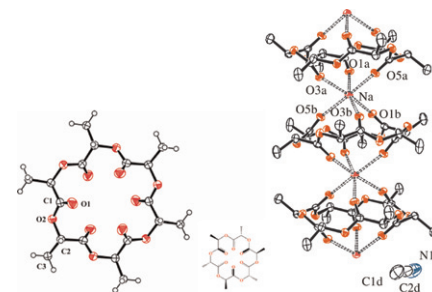


Malcolm H. Chisholm

J. Organomet. Chem. 693 (2008) 808

Catalytic formation of cyclic-esters and -depsipeptides and chemical amplification by complexation with sodium ions

A new route to the formation of 18-membered rings derived from glycolide and lactide is described employing $NaBPh_4$ which effectively removes these from a dynamic combinatorial library of rings.



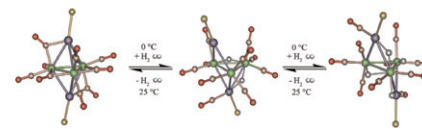
Regular Papers

Richard D. Adams, Burjor Captain, Lei Zhu

J. Organomet. Chem. 693 (2008) 819

Facile activation of hydrogen by unsaturated platinum–osmium carbonyl cluster complexes

The electronically unsaturated cluster complex $\text{Os}_3\text{Pt}_2(\text{CO})_{10}(\text{PBu}^t_3)_2$ (**10**) was obtained from the reaction of $\text{Os}_3(\text{CO})_{10}(\text{NCMe})_2$ with $\text{Pt}(\text{PBu}^t_3)_2$. Compound **10** reacts with hydrogen at 0 °C to yield the di- and tetra-hydrido compounds $\text{Os}_3\text{Pt}_2(\text{CO})_{10}(\text{PBu}^t_3)_2(\mu\text{-H})_2$ (**11**) and $\text{Os}_3\text{Pt}_2(\text{CO})_{10}(\text{PBu}^t_3)_2(\mu\text{-H})_4$ (**12**) by sequentially cleaving a Pt–Os bond with each addition of hydrogen. The hydrogen was eliminated from **11** by purging their solutions with nitrogen.

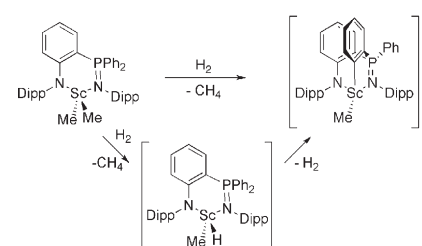


Korey D. Conroy, Warren E. Piers, Masood Parvez

J. Organomet. Chem. 693 (2008) 834

Synthesis and thermal behavior of dimethyl scandium complexes featuring anilido-phosphinimine ancillary ligands

The synthesis of an anilido-phosphinimine ligand system is described, and used to prepare monomeric organometallic scandium derivatives. Thermolysis of the organoscandium complexes reveal metalation at a phosphorus substituent.

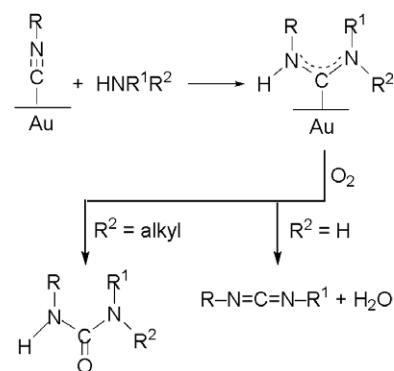


Robert J. Angelici

J. Organomet. Chem. 693 (2008) 847

Organometallic chemistry and catalysis on gold metal surfaces

In a reaction that mimics reactions of isocyanide ligands in transition metal complexes, amines attack isocyanides adsorbed on gold metal powder. In the presence of O_2 , ureas or carbodiimides are produced catalytically (see graphic). Also, gold powder catalyzes reactions of CO, primary amines, and O_2 to give isocyanates (R-N=C=O).

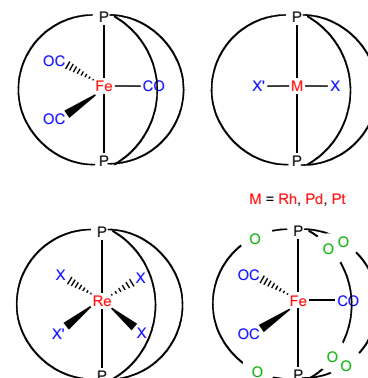


Katrin Skopek, John A. Gladysz

J. Organomet. Chem. 693 (2008) 857

Syntheses of gyroscope-like molecules via three-fold ring closing metatheses of bis(phosphine) complexes $\text{trans-L}_y\text{M}(\text{P}(\text{CH}_2)_n\text{CH}=\text{CH}_2)_2$, and extensions to bis(phosphite) complexes $\text{trans-Fe}(\text{CO})_3(\text{P}(\text{O}(\text{CH}_2)_n\text{CH}=\text{CH}_2)_2)$

The title reaction can be applied to trigonal bipyramidal, square planar, and octahedral complexes, provided that the spectator ligands L_y that comprise the rotor are no larger than halides or carbon monoxide, and is extended to trigonal bipyramidal phosphite complexes.

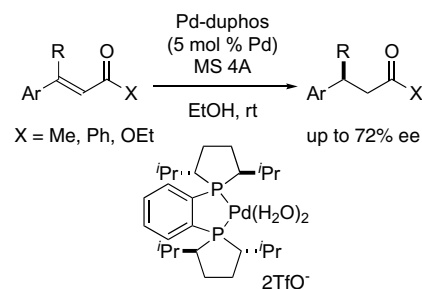


Daiki Monguchi, Christine Beemelmanns, Daisuke Hashizume, Yoshitaka Hamashima, Mikiko Sodeoka

J. Organomet. Chem. 693 (2008) 867

Catalytic asymmetric conjugate reduction with ethanol: A more reactive system Pd(II)-*i*-Pr-DUPHOS complex with molecular sieves 4A

A catalytic asymmetric conjugate reduction of α,β -unsaturated carbonyl compounds using a novel system consisting of Pd-*i*-Pr-DUPHOS complex with molecular sieves 4A is described. In this reaction, EtOH worked well as a solvent and a reducing agent, and the reduced compounds were obtained with up to 72% ee.

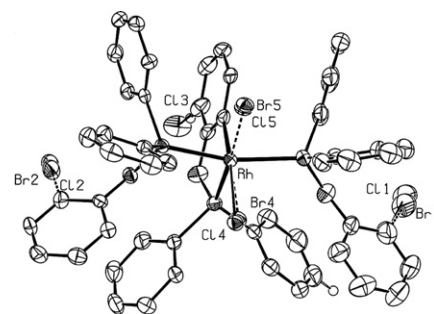


Klaus Ruhland, Peter Gigler, Eberhardt Herdtweck

J. Organomet. Chem. 693 (2008) 874

Some phosphinite complexes of Rh and Ir, their intramolecular reactivity and DFT calculations about their application in biphenyl metathesis

The possibility of the re-organization of biphenyl units according to a metathesis reaction, a yet unprecedented transformation, is examined theoretically (DFT: B3PW91/LANL2DZ) and with first experimental approaches using mainly Rh as center metal and phosphinite ligands of the type $\text{Ph}^{\text{o-X}}\text{-O}(\text{PR}_2)$ ($\text{X} = \text{H}, \text{Br}, \text{I}$ or $\text{Ph}^{\text{o-X}}\text{-O}(\text{PR}_2)$, $\text{R}: \text{Ph}, \text{Cy}, \text{iPr}$), which function as ligand and substrate both in one. The intramolecular reactivity between the center metal (Rh, Ir) and the *ortho* substituents of the phosphinite ligands is examined.

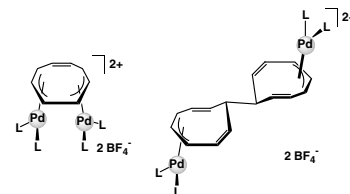


Tetsuro Murahashi, Naohiro Kato, Sensuke Ogoshi, Hideo Kurosawa

J. Organomet. Chem. 693 (2008) 894

Synthesis and structure of dipalladium complexes containing cyclooctatetraene and bicyclooctatrienyl ligands

The reaction of the reactive dipalladium(I) complex $[\text{Pd}_2(\text{CH}_3\text{CN})_6][\text{BF}_4]_2$ with cyclooctatetraene (COT) (1 equiv.) yields the mono-adduct $[\text{Pd}_2(\mu\text{-}\eta^3\text{:}\eta^3\text{-C}_8\text{H}_8)(\text{CH}_3\text{CN})_4][\text{BF}_4]_2$. The mono-adduct reacts with COT to give the bicyclooctatrienyl complex $[\text{Pd}_2(\mu\text{-}\eta^3\text{:}\eta^3\text{-C}_{16}\text{H}_{16})(\text{CH}_3\text{CN})_4][\text{BF}_4]_2$. The products were structurally characterized by X-ray crystallographic analyses.



Glenn Kuchenbeiser, Bruno Donnadieu, Guy Bertrand

J. Organomet. Chem. 693 (2008) 899

Stable bis(diisopropylamino)cyclopropenylidene (BAC) as ligand for transition metal complexes

For the first time, the stable bis(diisopropylamino)cyclopropenylidene is used to prepare transition metal complexes via ligand exchange.

