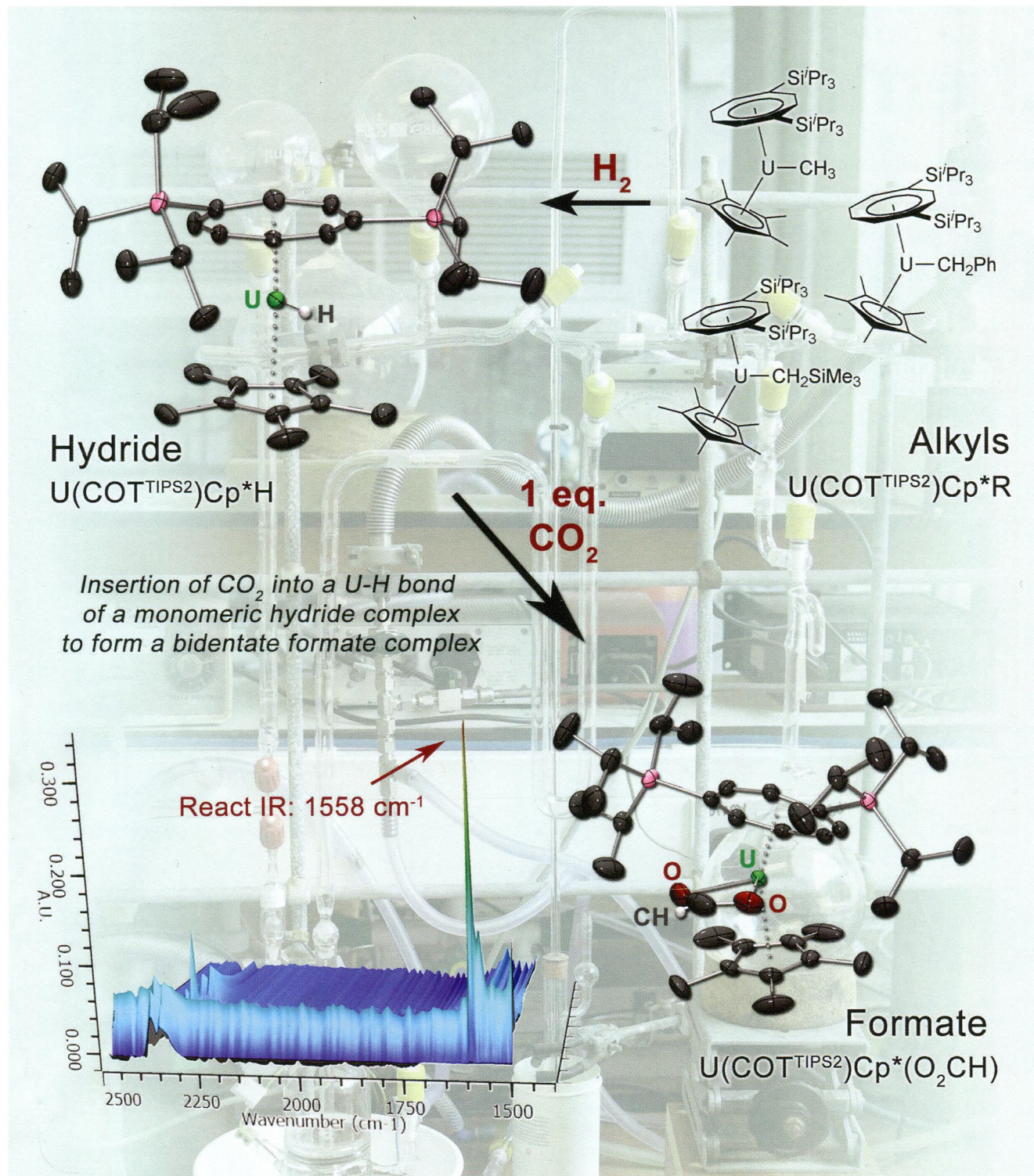


ORGANOMETALLICS



ON THE COVER: The cover page describes some of the work by the Cloke group on the activation of small molecules by mixed-sandwich organouranium complexes. In particular, a rare example of a uranium hydride readily inserts CO_2 to form the first example of a bidentate uranium formate complex. The background to the cover picture shows a piece of a “classic chemistry kit” used for the stoichiometric transfer of gases in the Cloke laboratory, the Toepler Pump, a form of mercury piston pump invented by August Toepler in Germany in the 1850s. See the paper by Cloke et al. on pages 5243–5251.

Editor's Page

5243

[dx.doi.org/10.1021/om400973s](https://doi.org/10.1021/om400973s)**Award-Winning Organometallic Chemistry: The 2012 RSC Sir Geoffrey Wilkinson Award**

John A. Gladysz



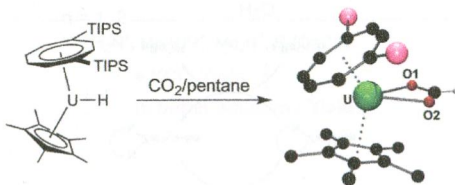
Articles

5244

5

[dx.doi.org/10.1021/om400720m](https://doi.org/10.1021/om400720m)**Synthesis and CO_2 Insertion Chemistry of Uranium(IV) Mixed-Sandwich Alkyl and Hydride Complexes**

Jessica A. Higgins, F. Geoffrey N. Cloke,* and S. Mark Roe

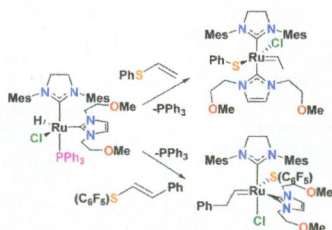


5253 **S**

A New Route to Ruthenium Thiolate Alkylidene Complexes

Fatme Dahcheh and Douglas W. Stephan*

dx.doi.org/10.1021/om400740p

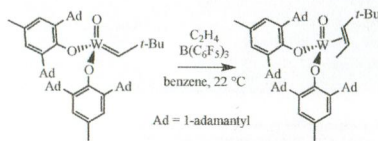


5256 **S**

B(C₆F₅)₃ Activation of Oxo Tungsten Complexes That Are Relevant to Olefin Metathesis

Dmitry V. Peryshkov, William P. Forrest, Richard R. Schrock,* Stacey J. Smith, and Peter Müller

dx.doi.org/10.1021/om4007906

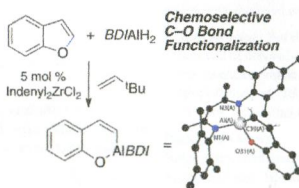


5260 **S**

A Highly Chemoselective, Zr-Catalyzed C–O Bond Functionalization of Benzofuran

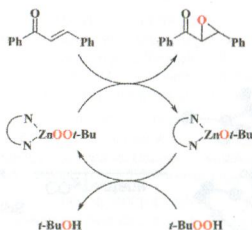
Shuhui Yow, Adi E. Nako, Léonard Neveu, Andrew J. P. White, and Mark R. Crimmin*

dx.doi.org/10.1021/om4008295

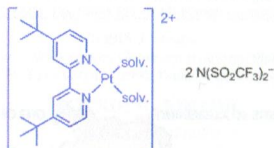


Catalytic Epoxidation of Enones Mediated by Zinc Alkylperoxide/*tert*-BuOOH Systems

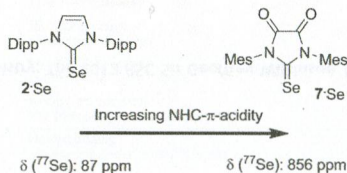
Marcin Kubisiak, Karolina Zelga, Iwona Justyniak, Ewa Tratkiewicz, Tomasz Pietrzak, Abdul R. Keeri, Zbigniew Ochal, Larissa Hartenstein, Peter W. Roesky, and Janusz Lewiński*

**Isolation of a Dicationic Platinum Complex with Two Accessible Coordination Sites**

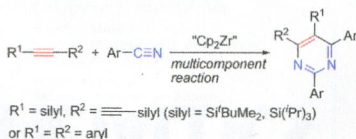
Miriam A. Bowring, Robert G. Bergman,* and T. Don Tilley*

**Determining the π -Acceptor Properties of N-Heterocyclic Carbenes by Measuring the ^{77}Se NMR Chemical Shifts of Their Selenium Adducts**

Annika Liske, Kathrin Verlinden, Hannes Buhl, Klaus Schaper, and Christian Ganter*

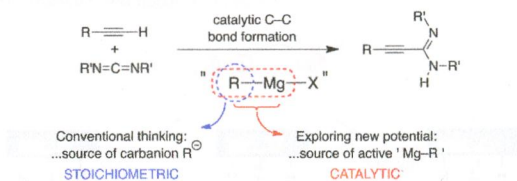
**Reactions of Zirconocene Butadiyne or Monoynone Complexes with Nitriles: Straightforward Synthesis of Functionalized Pyrimidines**

Xu You, Shasha Yu, and Yuanhong Liu*



Catalytic C–C Bond Formation Promoted by Organo- and Amidomagnesium(II) Compounds

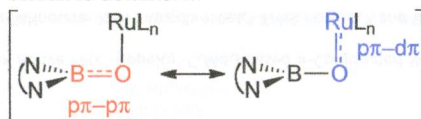
Ryan J. Schwamm and Martyn P. Coles*



Oxygenation of a Ruthenium Complex Bearing a PBP-Pincer Ligand Inducing the Formation of a Boronato Ligand with a Weak Ru–O Bond

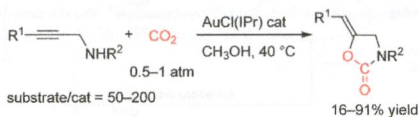
Takuma Miyada and Makoto Yamashita*

Which is dominant?



NHC–Gold(I) Complexes as Effective Catalysts for the Carboxylative Cyclization of Propargylamines with Carbon Dioxide

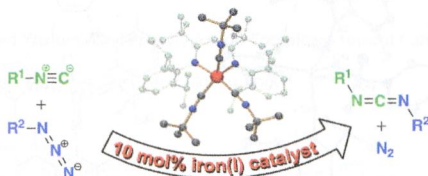
Shun Hase, Yoshihito Kayaki, and Takao Ikariya*



Articles

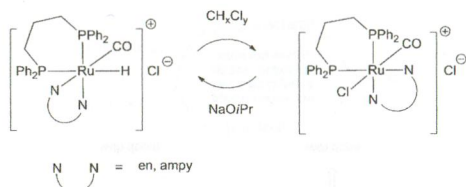
Mechanism of Catalytic Nitrene Transfer Using Iron(II)–Isocyanide Complexes

Ryan E. Cowley, Matthew R. Golder, Nathan A. Eckert, Malik H. Al-Afyouni, and Patrick L. Holland*



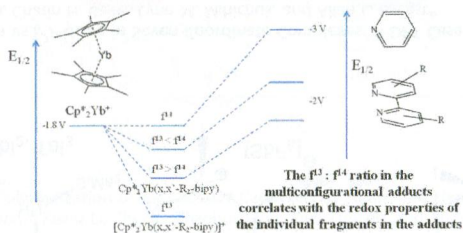
Synthesis of $[\text{RuX}(\text{CO})(\text{dppp})(\text{NN})\text{Cl}]$ ($\text{X} = \text{H}, \text{Cl}; \text{NN} = \text{en}, \text{ampy}$) Complexes and Their Use as Catalysts for Transfer Hydrogenation

Shuanming Zhang, Salvatore Baldino, and Walter Baratta*



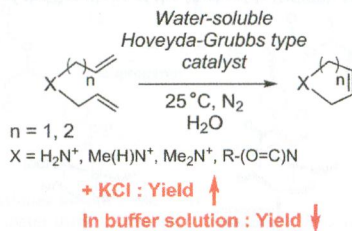
Influence of the Torsion Angle in 3,3'-Dimethyl-2,2'-bipyridine on the Intermediate Valence of Yb in $(\text{C}_5\text{Me}_5)_2\text{Yb}(\text{3,3}'\text{-Me}_2\text{-bipy})$

Grégory Nocton,* Corwin H. Booth, Laurent Maron, and Richard A. Andersen*



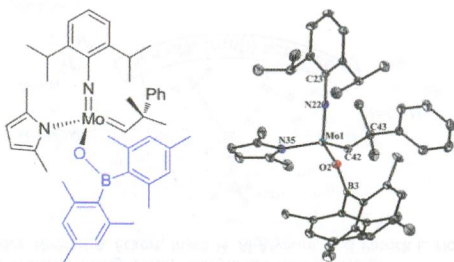
Effect of Added Salt on Ring-Closing Metathesis Catalyzed by a Water-Soluble Hoveyda-Grubbs Type Complex To Form N-Containing Heterocycles in Aqueous Media

Takashi Matsuo,* Takefumi Yoshida, Akira Fujii, Keiya Kawahara, and Shun Hirota



New Boron-Containing Molybdenum Imido Alkylidene Complexes for Linear Olefin Homometathesis

Alexandre Nasr, Pierre-Alain R. Breuil,* Duarte C. Silva, Mikaël Berthod, Nicolas Dellus, Erwann Jeanneau, Marc Lemaire, and H el ene Olivier-Bourbigou*

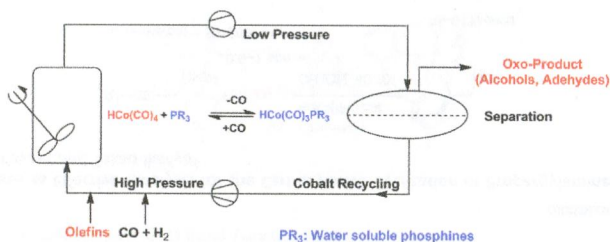


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dx.doi.org/10.1021/om400579f

Water-Soluble-Phosphines-Assisted Cobalt Separation in Cobalt-Catalyzed Hydroformylation

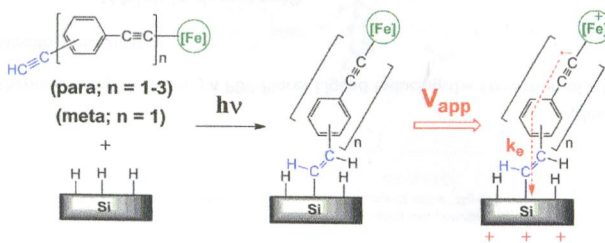
L aszl o T. Mika, L aszl o Orha, Eddie van Driessche, Ron Garton, Katalin Zih-Per enyi, and Istv an T. Horv ath*

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dx.doi.org/10.1021/om4006017

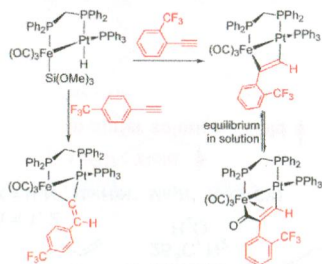
Covalent Immobilization of Redox-Active Fe(κ^2 -dppe)(η^5 -C₅Me₅)-Based π -Conjugated Wires on Oxide-Free Hydrogen-Terminated Silicon Surfaces

Katy Green, Nicolas Gauthier, Hiba Sahnoune, Jean-Fran ois Halet,* Fr ed eric Paul,* and Bruno Fabre*



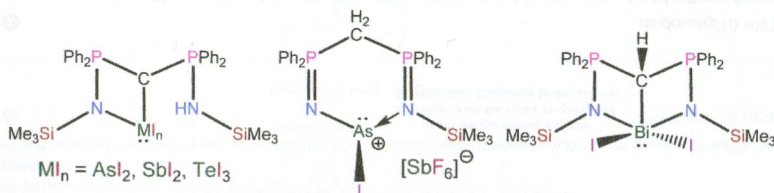
Reactivity of Silyl-Substituted Iron–Platinum Hydride Complexes toward Unsaturated Molecules: 4. Insertion of Fluorinated Aromatic Alkynes into the Platinum–Hydride Bond. Synthesis and Reactivity of Heterobimetallic Dimetallacyclopentenone, Dimetallacyclobutene, μ -Vinylidene, and μ_2 - σ -Alkenyl Complexes

Isabelle Jourdain,* Michael Knorr,* Carsten Strohmann, Christian Unkelbach, Saúl Rojo, Patricia Gómez-Iglesias, and Fernando Villafaña



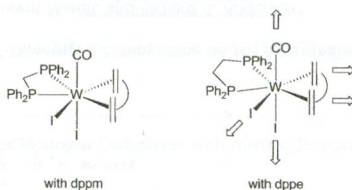
CH–NH Tautomerism in the Products of the Reactions of the Methanide $[\text{HC}(\text{PPh}_2\text{NSiMe}_3)_2]^-$ with Pnictogen and Tellurium Iodides

Ramalingam Thirumoorthi, Tristram Chivers,* Chris Gendy, and Ignacio Vargas-Baca*



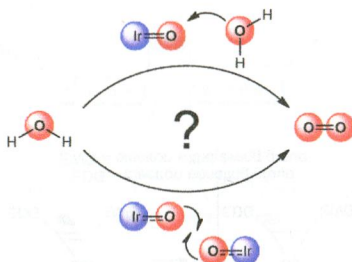
Bite Angle Effects of κ^2 P-dppm vs κ^2 P-dppe in Seven-Coordinate Complexes: A DFT Case Study

Aneesh Chacko, Ubong R. Idem, Chatin H. Bains, Lynn M. Mihichuk, and Allan L. L. East*



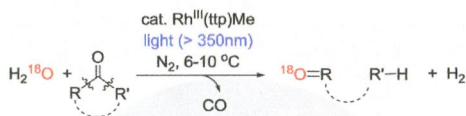
Probing the Viability of Oxo-Coupling Pathways in Iridium-Catalyzed Oxygen Evolution

Jonathan Graeupner, Ulrich Hintermair, Daria L. Huang, Julianne M. Thomsen, Mike Takase, Jesús Campos, Sara M. Hashmi, Menachem Elimelech,* Gary W. Brudvig,* and Robert H. Crabtree*



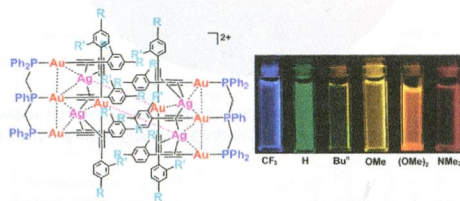
Photocatalytic Carbon–Carbon σ -Bond Anaerobic Oxidation of Ketones with Water by Rhodium(III) Porphyrins

Siu Yin Lee and Kin Shing Chan*



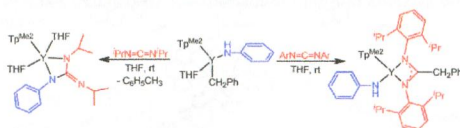
Structures and Phosphorescence Properties of Triphosphine-Supported Au_2Ag_2 and Au_8Ag_4 Alkynyl Cluster Complexes

Liang-Jin Xu, Jin-Yun Wang, Li-Yi Zhang, Lin-Xi Shi, and Zhong-Ning Chen*



Reactivity of Scorpionate-Anchored Yttrium Alkyl Primary Amido Complexes toward Carbodiimides. Insertion Selectivity of Y–NHAr and Y–CH₂Ph Bonds

Weiyin Yi, Shujian Huang, Jie Zhang,* Zhenxia Chen, and Xigeng Zhou*



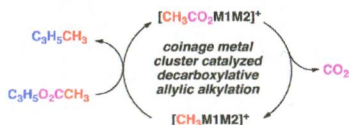
5416

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dx.doi.org/10.1021/om400712n

Catalytic Decarboxylative Coupling of Allyl Acetate: Role of the Metal Centers in the Organometallic Cluster Cations $[\text{CH}_3\text{Cu}_2]^+$, $[\text{CH}_3\text{AgCu}]^+$, and $[\text{CH}_3\text{Ag}_2]^+$

Halah Al Sharif, Krista L. Vikse, George N. Khairallah,* and Richard A. J. O'Hair*



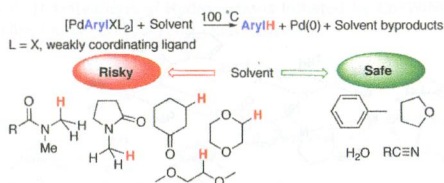
5428

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dx.doi.org/10.1021/om400713y

Solvent-Induced Reduction of Palladium-Aryls, a Potential Interference in Pd Catalysis

Jesús A. Molina de la Torre, Pablo Espinet, and Ana C. Albéniz*



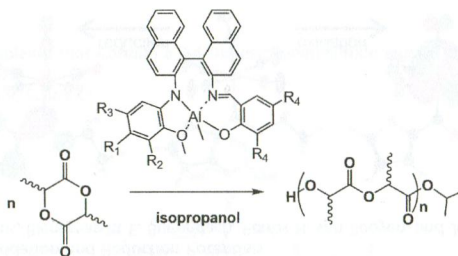
5435

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dx.doi.org/10.1021/om400714q

Stereoselective Ring-Opening Polymerization of *rac*-Lactides Catalyzed by Aluminum Hemi-Salen Complexes

Bo Gao, Ranlong Duan, Xuan Pang,* Xiang Li, Zhi Qu, Zhaohui Tang, Xiuli Zhuang, and Xuesi Chen



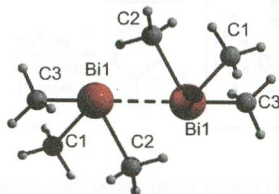
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dx.doi.org/10.1021/om400730r

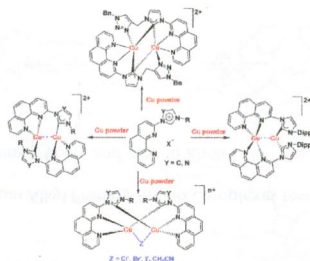
Solid-State Structures of Trialkylbismuthines BiR_3 (R = Me, *i*-Pr)

Stephan Schulz,* Andreas Kuczkowski, Dieter Bläser, Christoph Wölper, Georg Jansen, and Rebekka Haack



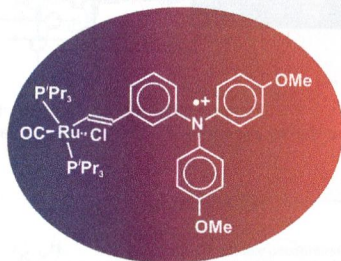
Dinuclear Copper(I) Complexes of Phenanthrolyl-Functionalized NHC Ligands

Bo Liu, Congyan Chen, Yuejiao Zhang, Xiaolong Liu, and Wanzhi Chen*

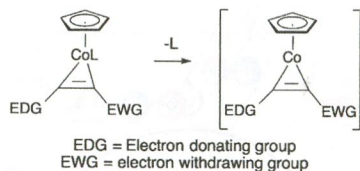


Charge and Spin Confinement to the Amine Site in 3-Connected Triarylamine Vinyl Ruthenium Conjugates

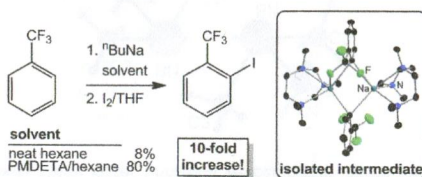
Walther Polit, Philipp Mücke, Evelyn Wuttke, Thomas Exner, and Rainer F. Winter*

Structural Characterization of $(C_5H_5)Co(PPh_3)(\eta^2\text{-alkyne})$ and $(C_5H_5)Co(\eta^2\text{-alkyne})$ Complexes of Highly Polarized Alkynes

Kim K. Baldrige,* Kevin D. Bunker, Carmen L. Vélez, Ryan L. Holland, Arnold L. Rheingold, Curtis E. Moore, and Joseph M. O'Connor*

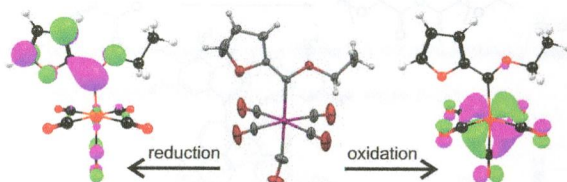


Donor-Activated Lithiation and Sodiation of Trifluoromethylbenzene: Structural, Spectroscopic, and Theoretical Insights
Jennifer A. Garden, David R. Armstrong, William Clegg, Joaquin García-Alvarez, Eva Hevia,* Alan R. Kennedy, Robert E. Mulvey,*
Stuart D. Robertson, and Luca Russo



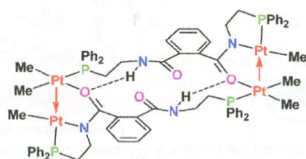
Synthesis, Structure, and Electrochemistry of Fischer Alkoxy- and Aminocarbene Complexes of Tungsten: The Use of DFT To Predict and Understand Oxidation and Reduction Potentials

Marié Landman,* René Pretorius, Blenerhassitt E. Buitendach, Petrus H. van Rooyen, and Jeanet Conradie*



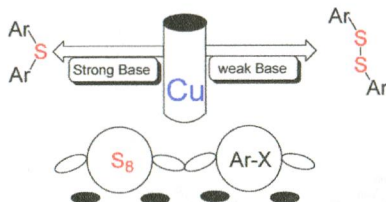
Organoplatinum Chemistry with a Dicarboxamide–Diphosphine Ligand: Hydrogen Bonding, Cyclometalation, and a Complex with Two Metal–Metal Donor–Acceptor Bonds

Nasser Nasser, Paul D. Boyle, and Richard J. Puddephatt*



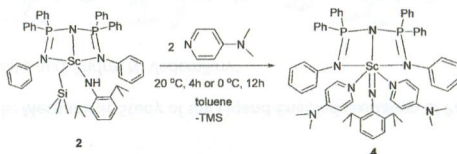
Use of Base Control To Provide High Selectivity between Diaryl Thioether and Diaryl Disulfide for C–S Coupling Reactions of Aryl Halides and Sulfur and a Mechanistic Study

Hsing-Ying Chen, Wei-Te Peng, Ying-Hsien Lee, Yu-Lun Chang, Yen-Jen Chen, Yi-Chun Lai, Nai-Yuan Jheng, and Hsuan-Ying Chen*



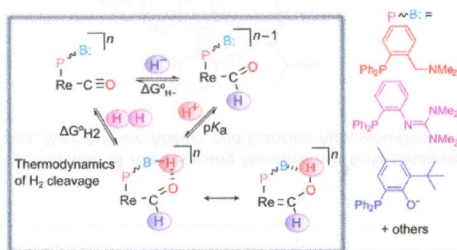
Facile Preparation of a Scandium Terminal Imido Complex Supported by a Phosphazene Ligand

Weifeng Rong, Jianhua Cheng, Zehuai Mou, Hongyan Xie, and Dongmei Cui*



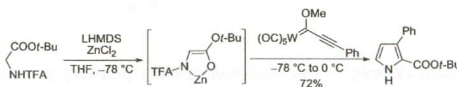
A Thermodynamic Analysis of Rhenium(I)–Formyl C–H Bond Formation via Base-Assisted Heterolytic H₂ Cleavage in the Secondary Coordination Sphere

Thomas S. Teets, Jay A. Labinger,* and John E. Bercaw*

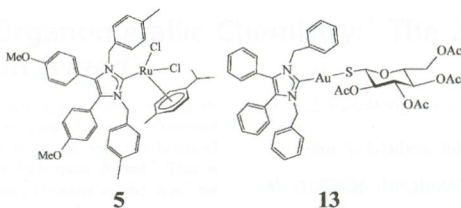


Synthesis of 2,3-Disubstituted Pyrroles Initiated by 1,4-Addition of Chelated Enolates onto Alkynyl Carbene Complexes

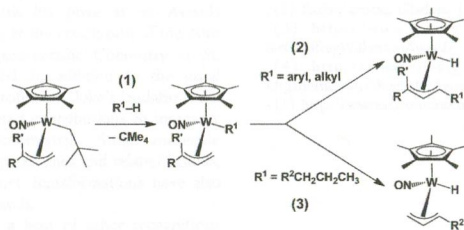
Rupsha Chaudhuri and Uli Kazmaier*



Novel Ruthenium(II) and Gold(I) NHC Complexes: Synthesis, Characterization, and Evaluation of Their Anticancer Properties
 Frauke Hackenberg, Helge Müller-Bunz, Raymond Smith, Wojciech Streciwilk, Xiangming Zhu, and Matthias Tacke*

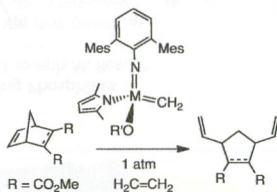


Insights into the Intermolecular C–H Activations of Hydrocarbons Initiated by Cp*W(NO)(η³-allyl)(CH₂CMe₃) Complexes
 Guillaume P. Lefèvre, Rhett A. Baillie, Diana Fabulyak, and Peter Legzdins*



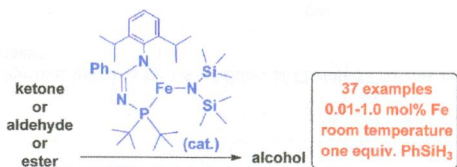
Synthesis of Methylidene Complexes that Contain a 2,6-Dimesitylphenylimido Ligand and Ethenolysis of 2,3-Dicarbomethoxynorbornadiene

Laura C. H. Gerber and Richard R. Schrock*

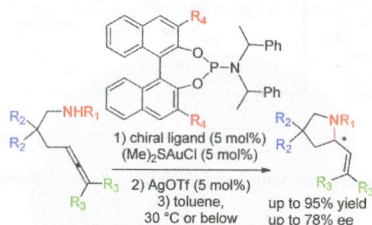


(N-Phosphinoamidinate)Iron Pre-Catalysts for the Room Temperature Hydrosilylation of Carbonyl Compounds with Broad Substrate Scope at Low Loadings

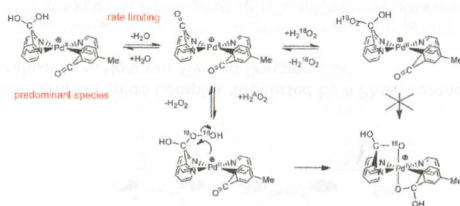
Adam J. Ruddy, Colin M. Kelly, Sarah M. Crawford, Craig A. Wheaton, Orson L. Sydora,* Brooke L. Small, Mark Stradiotto,* and Laura Turculet*

**Asymmetric Intramolecular Hydroamination of Allenes using Mononuclear Gold Catalysts**

Christophe Michon,* Florian Medina, Marc-Antoine Abadie, and Francine Agbossou-Niedercom*

**Palladium(IV) Monohydrocarbyls: Mechanistic Study of the Ligand-Enabled Oxidation of Palladium(II) Complexes with H₂O₂ in Water**

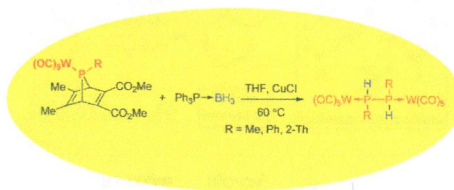
Williamson N. Oloo, Peter Y. Zavalij, and Andrei N. Vedernikov*



5615 **S**

dx.doi.org/10.1021/om400637j

Simple Access to Tungsten-Stabilized Dissecondary Diphosphines
 Rongqiang Tian,* Yanbo Mei, Zheng Duan,* and François Mathéy*

5619 **S**

dx.doi.org/10.1021/om4006802

On the Rapid Oxidation of Allene-Containing Phosphines

Feng Cai, Neela D. Thangada, Ende Pan, and Joseph M. Ready*

