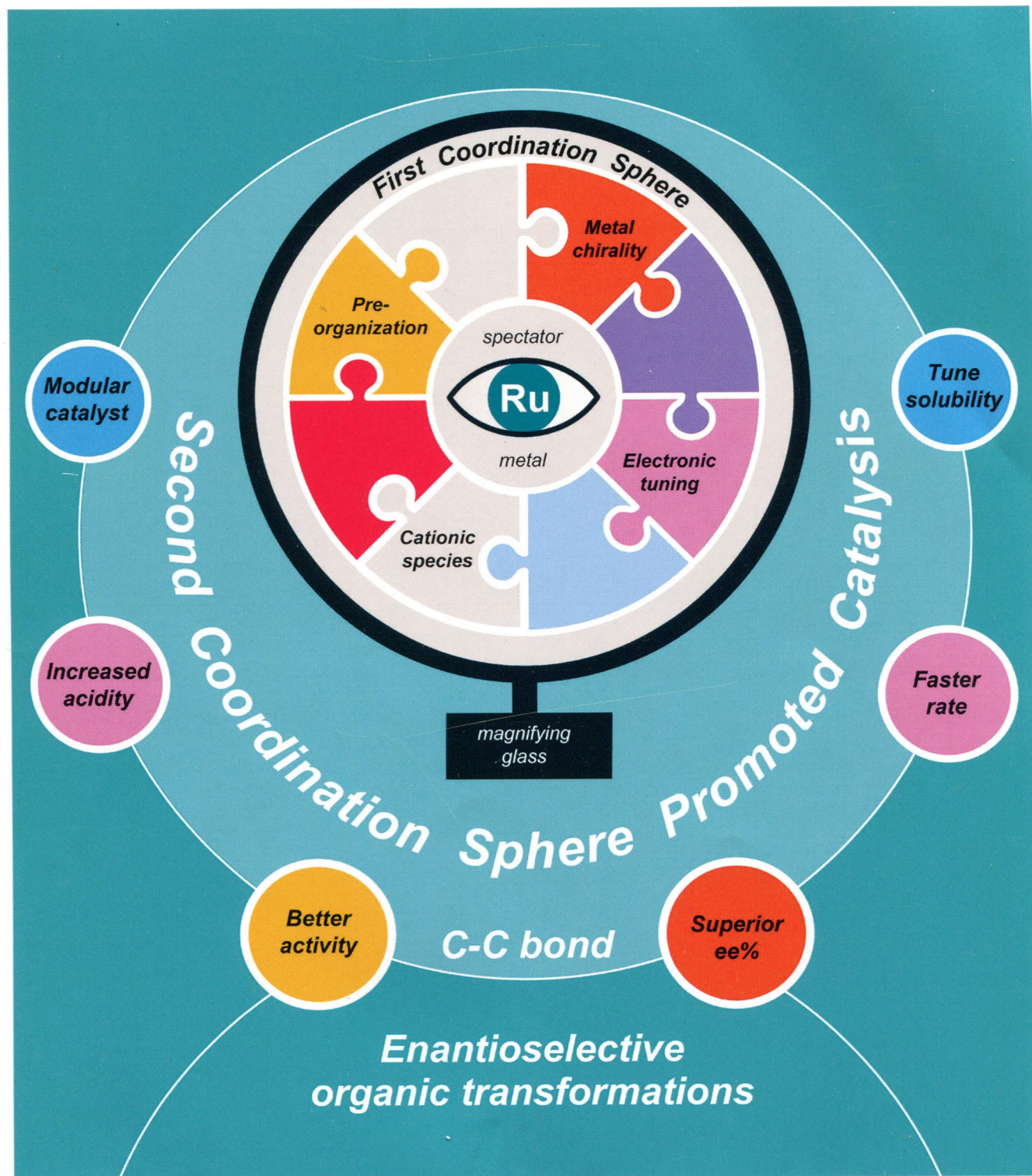


ORGANOMETALLICS



ON THE COVER: The “seeing eye ruthenium” represents a spectator metal with respect to the conformationally flexible NH-rich organic hydrogen bond donor 2-guanidinobenzimidazole (GBI), or chiral derivatives thereof. The chelation of GBI to ruthenium creates a second coordination sphere consisting of five NH moieties that are accessible to substrates, while the ruthenium remains hidden within the modular first coordination sphere. However, the magnifying glass emphasizes its importance in preorganizing and electronically fine-tuning the GBI ligand. The synperiplanar NH groups bind to hydrogen bond acceptors such as nitroalkenes, which become activated toward electrophiles, enabling a host of catalytic reactions. High enantioselectivities can be realized with nonracemic systems. The term “Second Coordination Sphere Promoted Catalysis” (SCSPC) is suggested. See the two papers by Mukherjee, Gladysz, and co-workers on pages 6709–6722 and 6723–6737.

Articles

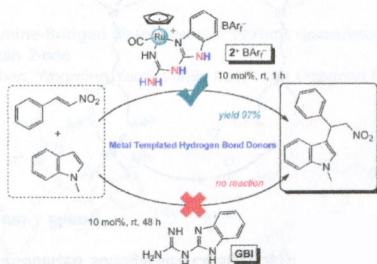
Cover Paper

 6709 

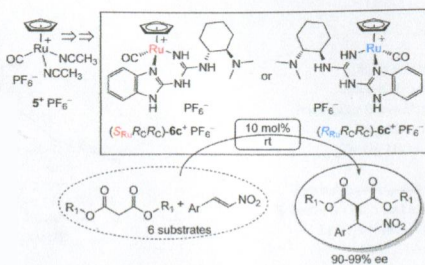
DOI: 10.1021/om500704u

Metal-Templated Hydrogen Bond Donors as “Organocatalysts” for Carbon–Carbon Bond Forming Reactions: Syntheses, Structures, and Reactivities of 2-Guanidinobenzimidazole Cyclopentadienyl Ruthenium Complexes

Alexander Scherer, Tathagata Mukherjee, Frank Hampel, and John A. Gladysz*



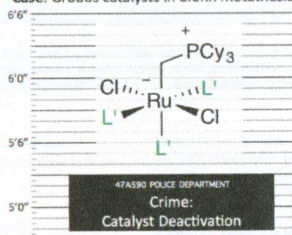
Syntheses of Enantiopure Bifunctional 2-Guanidinobenzimidazole Cyclopentadienyl Ruthenium Complexes: Highly Enantioselective Organometallic Hydrogen Bond Donor Catalysts for Carbon–Carbon Bond Forming Reactions
Tathagata Mukherjee, Carola Ganzmann, Nattamai Bhuvanesh, and John A. Gladysz*



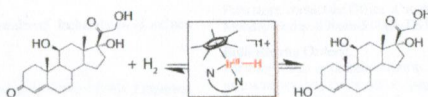
Communications

Donor-Induced Decomposition of the Grubbs Catalysts: An Intercepted Intermediate
Justin A. M. Lummiss, William L. McClennan, Robert McDonald, and Deryn E. Fogg*

Case: Grubbs catalysts in olefin metathesis

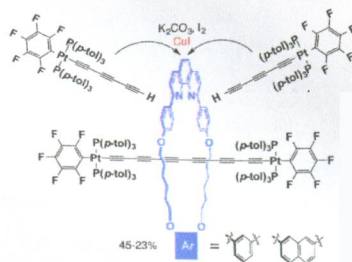


Selective Acceptorless Dehydrogenation and Hydrogenation by Iridium Catalysts Enabling Facile Interconversion of Glucocorticoids
Anh H. Ngo, Michael J. Adams, and Loi H. Do*



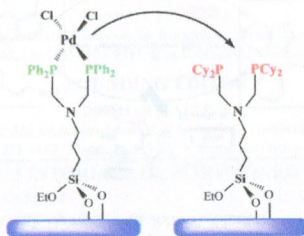
Rotaxanes Derived from Dimetallic Polynyediyl Complexes: Extended Axles and Expanded Macrocycles

Zuzana Baranová, Hashem Amini, Nattamai Bhuvanesh, and John A. Gladysz*



The Palladium Component of an Immobilized Sonogashira Catalyst System: New Insights by Multinuclear HRMAS NMR Spectroscopy

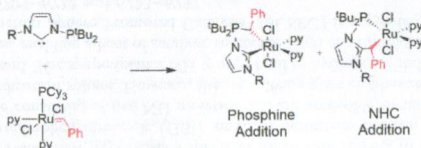
J. C. Pope, T. Posset, N. Bhuvanesh, and J. Blümel*



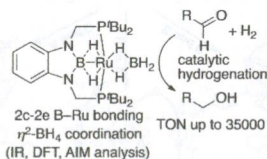
Articles

Unexpected Reactivity Patterns of Ruthenium Alkylidenes with N-Phosphino-Functionalized N-Heterocyclic Carbene Ligands (NHCPs)

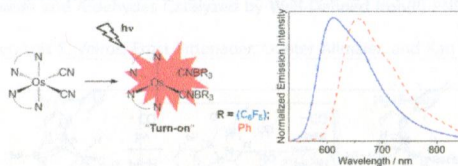
Christopher C. Brown, Philipp N. Plessow, Frank Rominger, Michael Limbach, and Peter Hofmann*



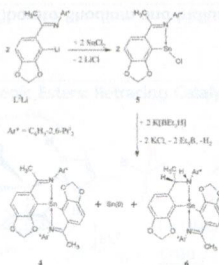
Synthesis, Structure, and Bonding Properties of Ruthenium Complexes Possessing a Boron-Based PBP Pincer Ligand and Their Application for Catalytic Hydrogenation
Takuma Miyada, Enrique Huang Kwan, and Makoto Yamashita*



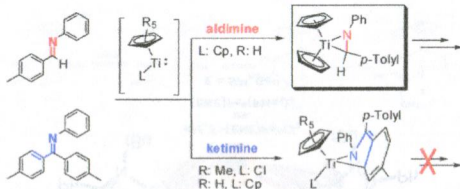
Neutral Luminescent Bis(bipyridyl) Osmium(II) Complexes with Improved Phosphorescent Properties
Wing-Kin Chu, Shek-Man Yiu, and Chi-Chiu Ko*



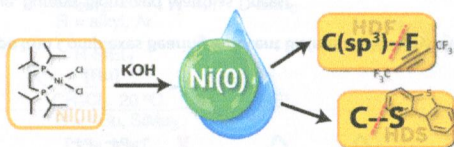
Intramolecularly C,N-Coordinated Homo- and Heteroleptic Organostannylenes
Miroslav Novák, Marek Bouška, Libor Dostál, Aleš Růžička, and Roman Jambor*



Aromatic Imines in the Titanocene Coordination Sphere—Titanaaziridine vs 1-Aza-2-titanacyclopent-4-ene Structures
 Florian Loose, Inka Plettenberg, Detlev Haase, Wolfgang Saak, Marc Schmidtman, André Schäfer, Thomas Müller,* and Rüdiger Beckhaus*

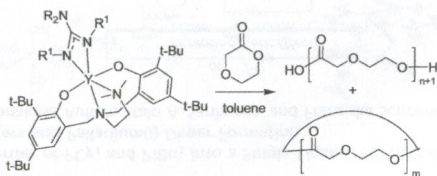


Synthesis of Low-Valent Nickel Complexes in Aqueous Media, Mechanistic Insights, and Selected Applications
 Illán Morales-Becerril, Marcos Flores-Álamo, Adrián Tlahuext-Aca, Alma Arévalo, and Juventino J. García*



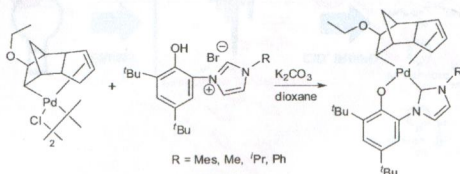
Synthesis and Characterization of Amine-Bridged Bis(phenolate) Yttrium Guanidinates and Their Application in the Ring-Opening Polymerization of 1,4-Dioxan-2-one

Tinghua Zeng, Yaorong Wang,* Qi Shen, Yingming Yao,* Yunjie Luo,* and Dongmei Cui

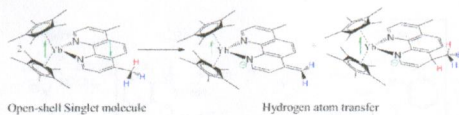


Synthesis, Structures, and Norbornene Polymerization Behavior of *o*-Aryloxy-Substituted NHC-Ligated σ , π -Cycloalkenyl Palladium Complexes

Liang Dang, Haibin Song, and Baiquan Wang*

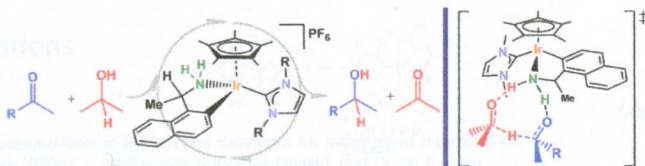


Carbon–Hydrogen Bond Breaking and Making in the Open-Shell Singlet Molecule $\text{Cp}^*_2\text{Yb}(4,7\text{-Me}_2\text{phen})$
Grégory Nocton,* Corwin H. Booth, Laurent Maron, Louis Ricard, and Richard A. Andersen*



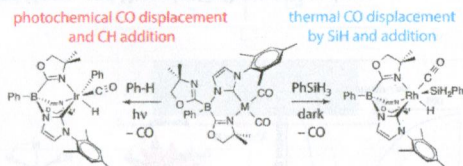
Highly Active Cp^*Ir Catalyst at Low Temperatures Bearing an N-Heterocyclic Carbene Ligand and a Chelated Primary Benzylamine in Transfer Hydrogenation

Sara Sabater, Miguel Baya,* and Jose A. Mata*



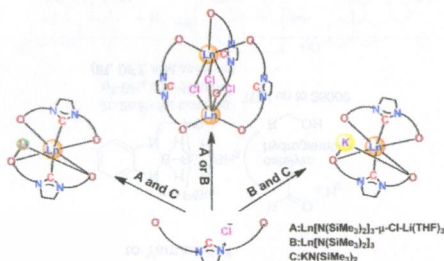
Mixed N-Heterocyclic Carbene–Bis(oxazolonyl)borato Rhodium and Iridium Complexes in Photochemical and Thermal Oxidative Addition Reactions

Songchen Xu, Kuntal Manna, Arkady Ellern, and Aaron D. Sadow*



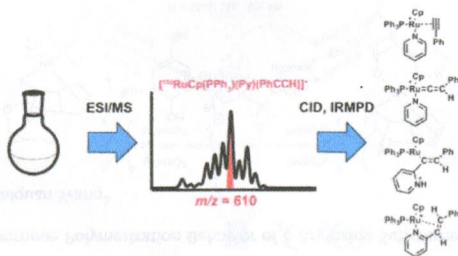
Synthesis of Bimetallic Bis(phenolate) N-Heterocyclic Carbene Lanthanide Complexes and Their Applications in the Ring-Opening Polymerization of L-Lactide

Min Zhang, Xufeng Ni,* and Zhiqian Shen

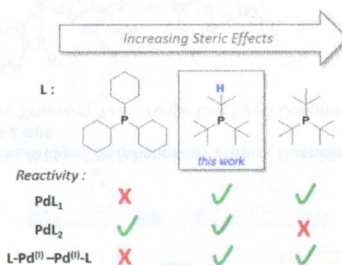


Monitoring of Reaction Intermediates in the Gas Phase: Ruthenium-Catalyzed C–C Coupling

Anton Škriba, Jiří Schulz, and Jana Roithová*

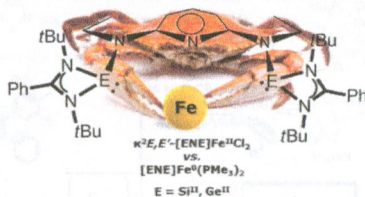
Combining the Reactivity Properties of PCy₃ and PtBu₃ into a Single Ligand, P(iPr)(tBu)₂. Reaction via Mono- or Bisphosphine Palladium(0) Centers and Palladium(I) Dimer Formation

Franziska Proutiere, Erik Lyngvi, Marialuisa Aufiero, Italo A. Sanhueza, and Franziska Schoenebeck*



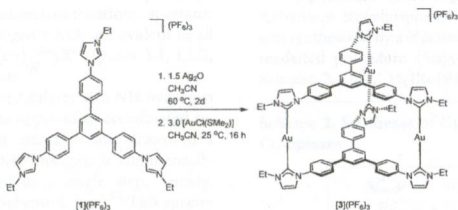
Highly Electron-Rich Pincer-Type Iron Complexes Bearing Innocent Bis(metallylene)pyridine Ligands: Syntheses, Structures, and Catalytic Activity

Daniel Gallego, Shigeyoshi Inoue, Burgert Blom, and Matthias Driess*

Switchable *N*-pyridine coordination

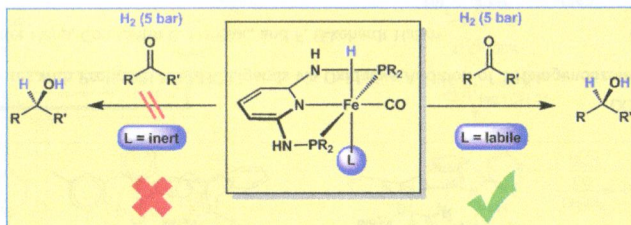
Synthesis of Nanometer-Sized Cylinder-Like Structures from a 1,3,5-Triphenylbenzene-Bridged Tris-NHC Ligand and Ag^I, Au^I, and Cu^I

Narayan Sinha, Florian Roelfes, Alexander Hepp, Carmen Mejuto, Eduardo Peris,* and F. Ekkehardt Hahn*



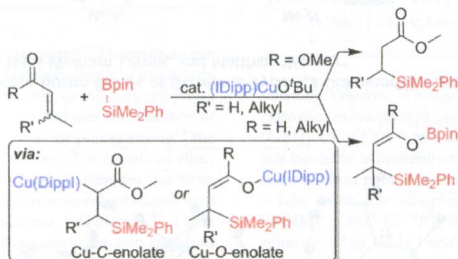
Efficient Hydrogenation of Ketones and Aldehydes Catalyzed by Well-Defined Iron(II) PNP Pincer Complexes: Evidence for an Insertion Mechanism

Nikolaus Gorgas, Berthold Stöger, Luis F. Veiros, Ernst Pittenauer, Günter Allmaier, and Karl Kirchner*



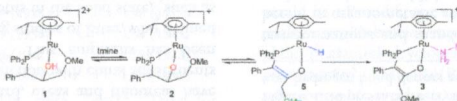
Cu^I-Catalyzed Conjugate Addition of Silyl Boronic Esters: Retracting Catalytic Cycles Using Isolated Copper and Boron Enolate Intermediates

Jacqueline Plotzicka and Christian Kleeberg*



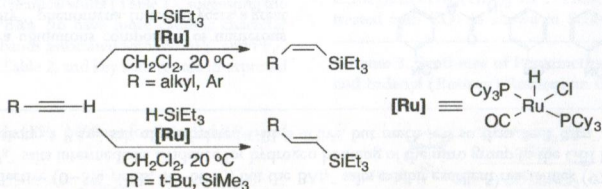
Reactivity of the Chiral Metallic Brønsted Acid $[(\eta^6\text{-}p\text{-MeC}_6\text{H}_4\text{iPr})\text{Ru}(\kappa^3\text{P},\text{O},\text{O}'\text{-POH})][\text{SbF}_6]_2$ ($\text{POH} = (\text{S}_{\text{C}1}\text{R}_{\text{C}2})\text{-Ph}_2\text{PC}(\text{Ph})\text{HC}(\text{OH})\text{HCH}_2\text{OMe}$) toward Aldimines

Pilar Pardo, Daniel Carmona,* Pilar Lamata,* Ricardo Rodríguez,* Fernando J. Lahoz, Pilar García-Orduña, and Luis A. Oro



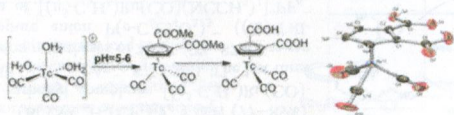
Experimental and Computational Studies of the Ruthenium-Catalyzed Hydrosilylation of Alkynes: Mechanistic Insights into the Regio- and Stereoselective Formation of Vinylsilanes

Ruili Gao, Dale R. Pahls, Thomas R. Cundari,* and Chae S. Yi*



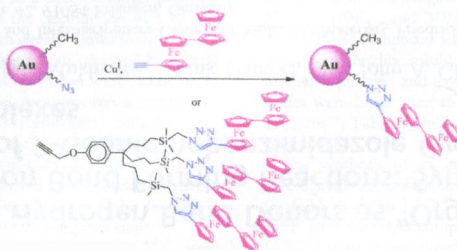
Cyclopentadienyl Chemistry in Water: Synthesis and Properties of Bifunctionalized $[(\eta^5\text{-C}_5\text{H}_3(\text{COOR})_2)\text{M}(\text{CO})_3]$ ($\text{M} = \text{Re}$ and $^{99\text{m}}\text{Tc}$) Complexes

Samer Ursillo, Daniel Can, Harmel W. Peindy N'Dongo, Paul Schmutz, Bernhard Spingler, and Roger Alberto*



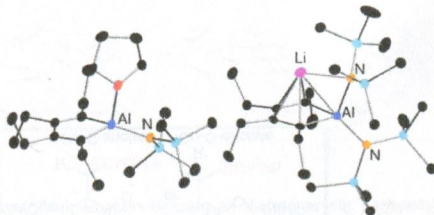
"Click" Assemblies and Redox Properties of Arene- and Gold-Nanoparticle-Cored Triazolylbiferrocene-Terminated Dendrimers

Amalia Rapakousiou, Rodrigue Djeda, Maxime Grillaud, Na Li, Jaime Ruiz, and Didier Astruc*



Syntheses and Structures of Stable 1-Aminoalumole Derivatives

Tomohiro Agou, Tatsuya Wasano, Takahiro Sasamori, and Norihiro Tokitoh*

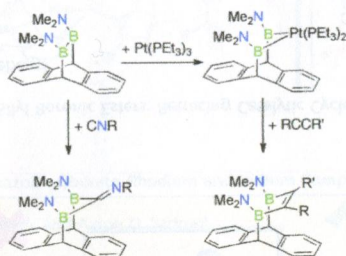


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DOI: 10.1021/om501087u

Insertion Reactions into the Boron–Boron Bonds of Barrelene-Type 1,2-Diaminodiboranes(4)

Steffen Pospiech, Michael Bolte, Hans-Wolfram Lerner, and Matthias Wagner*



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DOI: 10.1021/om501120u

Synthesis of Complexes with Protic NH,NH-NHC Ligands via Oxidative Addition of 2-Halogenoazoles to Zero-Valent Transition Metals

Rajorshi Das, Alexander Hepp, Constantin G. Daniliuc, and F. Ekkehardt Hahn*

