

AIMS AND SCOPE

Although total synthesis reached extraordinary levels of sophistication in the last century, the development of practical and efficient synthetic methodologies is still in its infancy. Achieving chemical reactions that are highly selective, economical, safe, resource- and energy-efficient, and environmentally benign is a primary challenge to chemistry in this century. Realizing this goal will demand the highest level of scientific creativity, insight and understanding in a combined effort by academic, government and industrial chemists and engineers.

Advanced Synthesis & Catalysis promotes that process by publishing high-impact research results reporting the development and application of efficient synthetic methodologies and strategies for organic targets that range from pharmaceuticals to organic materials. Homogeneous catalysis, biocatalysis, organocatalysis and heterogeneous catalysis directed towards organic synthesis are playing an ever increasing role in achieving synthetic efficiency. Asymmetric catalysis remains a topic of central importance. In addition, *Advanced Synthesis & Catalysis* includes other areas that are making a contribution to green synthesis, such as synthesis design, reaction techniques, flow chemistry and continuous processing, multi-phase catalysis, green solvents, catalyst immobilization and recycling, separation science and process development.

Practical processes involve development of effective integrated strategies, from an elegant synthetic route based on mechanistic and structural insights at the molecular level through to process optimization at larger scales. These endeavors often entail a multidisciplinary approach that spans the broad fields chemistry, biology, and engineering and involve contributions from academic, government, and industrial laboratories.

The unique focus of *Advanced Synthesis & Catalysis* has rapidly made it a leading organic chemistry and catalysis journal. The goal of *Advanced Synthesis & Catalysis* is to help inspire a new era of chemical science, based on the efforts of synthetic chemists and on interdisciplinary collaboration, so that chemistry will make an even greater contribution to the quality of life than it does now.

Advanced Synthesis & Catalysis

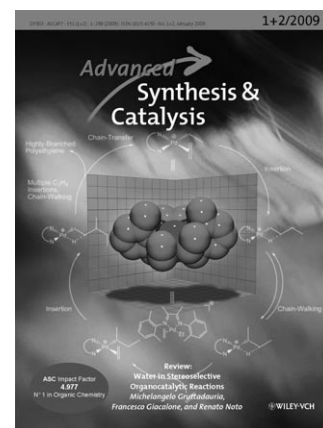
succeeding *Journal für praktische
Chemie*
(founded in 1828)

New Impact Factor
4.977
N° 1 in Organic Chemistry
for the 4th straight year

2009, 351, 1 + 2, Pages 1–288

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The cover picture, provided by Maurice S. Brookhart, shows an example of a cationic palladium diimine complex which catalyzes polymerization of ethylene to high molecular weight, highly branched polyethylene. The catalyst resting states are the alkyl ethylene complexes as modeled by the ethyl ethylene complex shown. Migratory insertion of these alkyl ethylene species leads to β -agostic complexes in which palladium can rapidly migrate along the chain ("chain-walking") through β -elimination/readdition reactions. Trapping of branched alkyl complexes followed by insertion leads to formation of branches in the polymer chain. Polyethylenes formed exhibit branches-on-branches since chain-walking through tertiary centers is facile.



COMMENTARY

Advanced Synthesis & Catalysis – Growing in Size and
Impact

Adv. Synth. Catal. **2009**, 351, 25–31

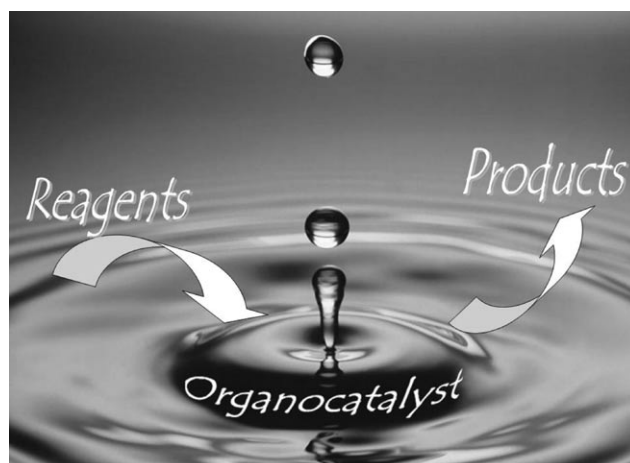
Joe P. Richmond*

REVIEW

33 Water in Stereoselective Organocatalytic Reactions

Adv. Synth. Catal. **2009**, 351, 33–57

Michelangelo Gruttadauria,* Francesco Giacalone,
Renato Noto

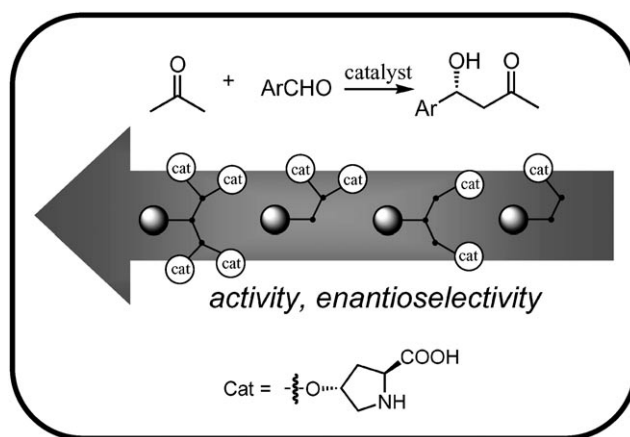


COMMUNICATIONS

59 Elucidation of Architectural Requirements from a Spacer in Supported Proline-Based Catalysts of Enantioselective Aldol Reaction

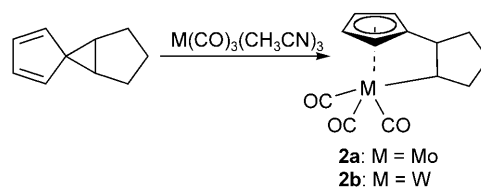
Adv. Synth. Catal. **2009**, 351, 59–65

Kerem Goren, Tzofit Kehat, Moshe Portnoy*

66 Stable and Catalytically Highly Active *ansa* Compounds with Cycloalkyl Moieties as Bridging Units

Adv. Synth. Catal. **2009**, 351, 66–70

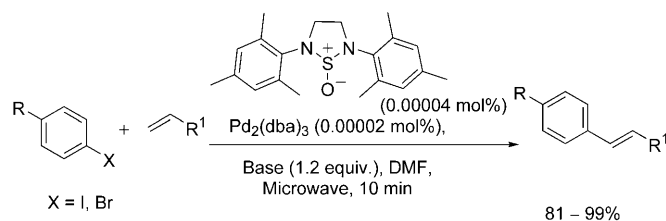
Alejandro Capapé, Alexander Raith, Fritz E. Kühn*



71 The First Thiadiazolidine 1-Oxide System for Phosphine-Free Palladium-Mediated Catalysis

Adv. Synth. Catal. **2009**, 351, 71–77

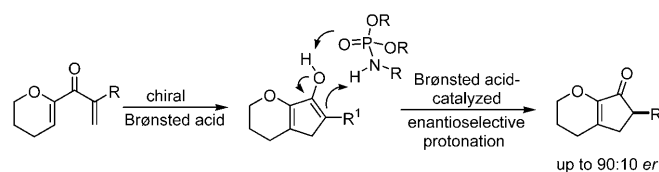
Benjamin R. Buckley,* Stephen P. Neary



78 A Catalytic Asymmetric Electrocyclization-Protonation Reaction


Adv. Synth. Catal. **2009**, 351, 78–84

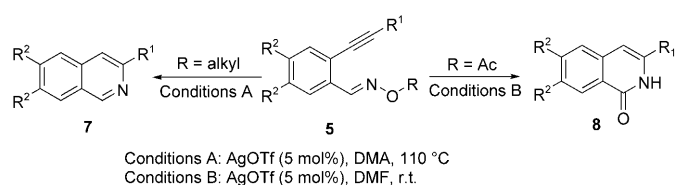
Magnus Rueping,* Winai Ieawsuwan



A Dramatic Substituent Effect in Silver(I)-Catalyzed Regioselective Cyclization of *ortho*-Alkynylaryl Aldehyde Oxime Derivatives

Adv. Synth. Catal. **2009**, 351, 85–88

 Hongyin Gao, Junliang Zhang*

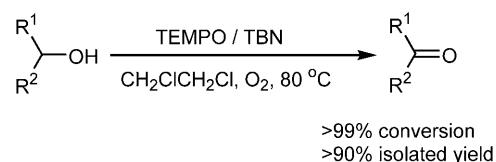


85

TEMPO-*tert*-Butyl Nitrite: An Efficient Catalytic System for Aerobic Oxidation of Alcohols

Adv. Synth. Catal. **2009**, 351, 89–92


Xijun He, Zhenlu Shen,* Weimin Mo, Nan Sun, Baoxiang Hu, Xinquan Hu*

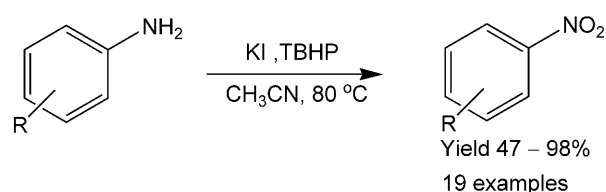


89

Selective Oxidation of Aromatic Amines to Nitro Derivatives using Potassium Iodide-*tert*-Butyl Hydroperoxide Catalytic System

Adv. Synth. Catal. **2009**, 351, 93–96

 K. Rajender Reddy,* C. Uma Maheswari, M. Venkateshwar, M. Lakshmi Kantam

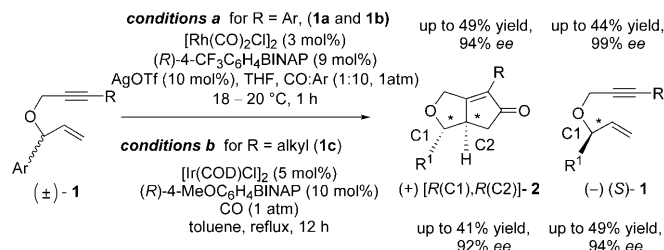


93

Kinetic Resolutions by Enantioselective Pauson–Khand-Type Reaction

Adv. Synth. Catal. **2009**, 351, 97–102


 Dong Eun Kim, Jaesung Kwak, In Su Kim, Nakcheol Jeong*

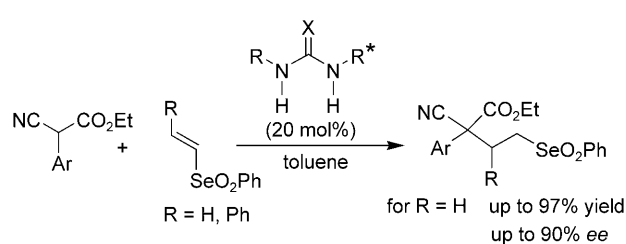


97

Enantioselective Organocatalytic Michael Addition of α -Substituted Cyanoacetates to α,β -Unsaturated Selenones

Adv. Synth. Catal. **2009**, 351, 103–106


 Francesca Marini,* Silvia Sternativo, Francesca Del Verme, Lorenzo Testaferri, Marcello Tiecco

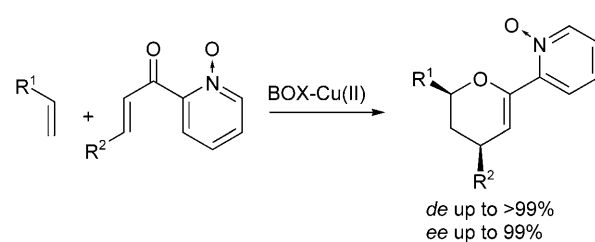


103

Highly Enantio- and Diastereoselective Inverse Electron Demand Hetero-Diels–Alder Reaction using 2-Alkenoylpyridine *N*-Oxides as *Oxo*-Heterodienes

Adv. Synth. Catal. **2009**, 351, 107–111

 Santiago Barroso, Gonzalo Blay,* M. Carmen Muñoz, José R. Pedro*

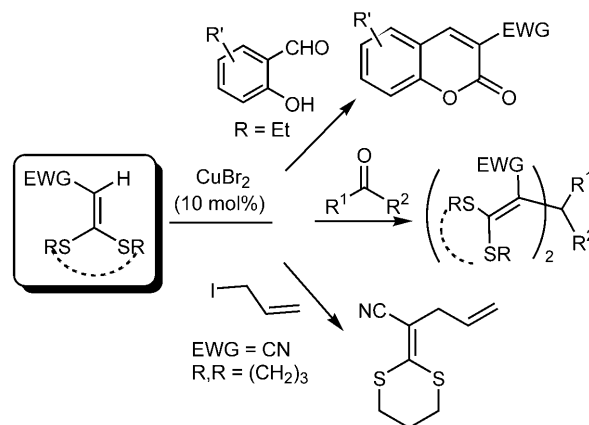


107

- 112** Copper(II)-Catalyzed C–C Bond-Forming Reactions of α -Electron-Withdrawing Group-Substituted Ketene S,S-Acetals with Carbonyl Compounds and a Facile Synthesis of Coumarins


Adv. Synth. Catal. **2009**, 351, 112–116

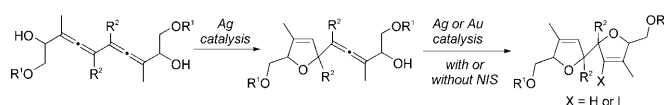
 Hong-Juan Yuan, Mang Wang,* Ying-Jie Liu, Qun Liu*



- 117** Stereoselective Synthesis of Conjugated Bisallenols as Precursors of Novel Bis(2,5-dihydrofuran) Derivatives


Adv. Synth. Catal. **2009**, 351, 117–122

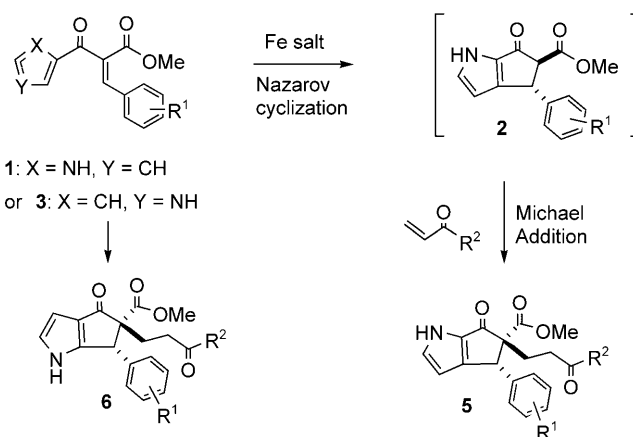
 Manojkumar Poonoth, Norbert Krause*



- 123** Iron(III) Salt-Catalyzed Nazarov Cyclization/Michael Addition of Pyrrole Derivatives


Adv. Synth. Catal. **2009**, 351, 123–128

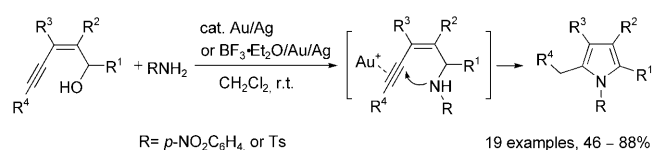
 Masamune Fujiwara, Motoi Kawatsura, Shuichi Hayase, Masato Nanjo, Toshiyuki Itoh*



- 129** An Efficient Domino Approach for the Synthesis of Multisubstituted Pyrroles via Gold/Silver-Catalyzed Amination/Cycloisomerization of (Z)-2-En-4-yn-1-ols


Adv. Synth. Catal. **2009**, 351, 129–134

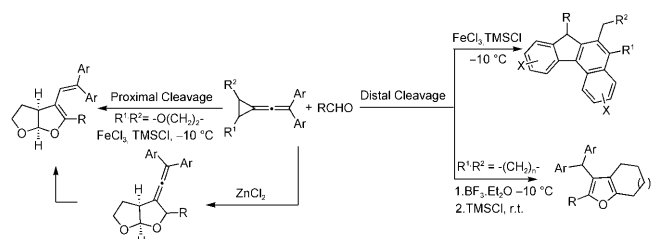
 Yuhua Lu, Xiaoping Fu, Haoyi Chen, Xiangwei Du, Xueshun Jia, Yuanhong Liu*



- 135** Lewis Acid-Mediated Selective Cycloadditions of Vinylidenecyclopropanes with Aromatic Aldehydes: An Efficient Protocol for the Synthesis of Benzo[c]fluorene, Furan and Furo[2,3-b]furan Derivatives


Adv. Synth. Catal. **2009**, 351, 135–140

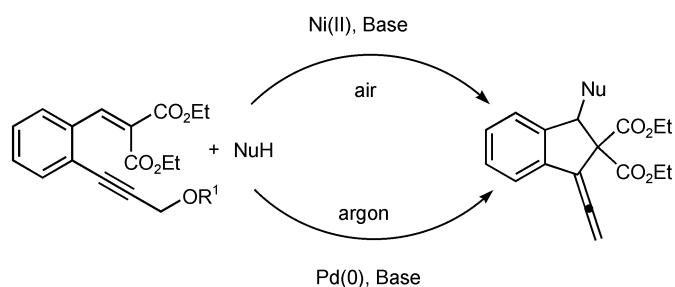
 Chenliang Su, Xian Huang*



One-Pot Synthesis of Highly Substituted Allenylidene Derivatives *via* Palladium- or Nickel-Catalyzed Tandem Michael Addition–Cyclization Reaction

Adv. Synth. Catal. **2009**, 351, 141–146


 Yun Shi, Jing Huang, Yan-Fang Yang, Lu-Yong Wu, Yan-Ning Niu, Peng-Fei Huo, Xue-Yuan Liu, Yong-Min Liang*

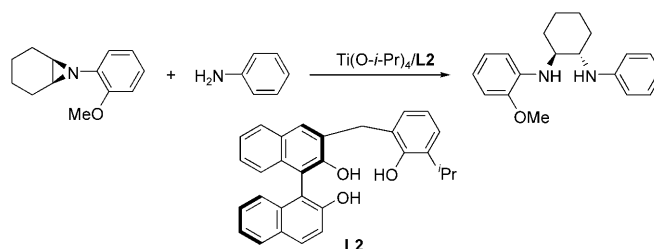


141

Titanium(IV)/Tridentate BINOL Derivative as Catalyst for *meso*-Aziridine Ring-Opening Reactions: High Enantioselectivity, Strong Positive Non-Linear Effect and Structural Characterization

Adv. Synth. Catal. **2009**, 351, 147–152


 Rongmin Yu, Yasuhiro Yamashita, Shū Kobayashi*

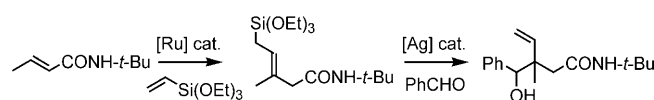


147

Ruthenium-Catalyzed C–H Bond Activation of Michael Acceptors: An Unusual Reactivity Leading to Allylsilanes

Adv. Synth. Catal. **2009**, 351, 153–157


 Marc-Olivier Simon, Rémi Martinez, Jean-Pierre Genêt, Sylvain Darses*

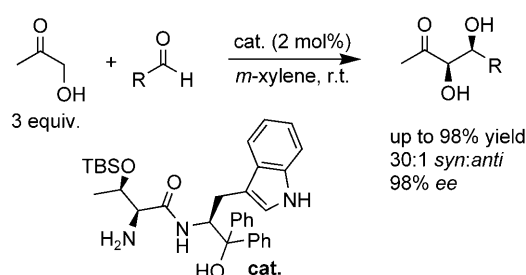


153

Highly Efficient Organocatalyzed Direct Asymmetric Aldol Reactions of Hydroxyacetone and Aldehydes

Adv. Synth. Catal. **2009**, 351, 158–162

 Xiaoyu Wu,* Zhixiong Ma, Zhengqing Ye, Shan Qian, Gang Zhao*




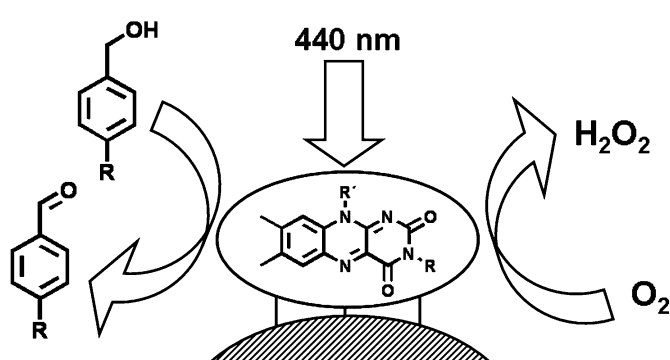
158

FULL PAPERS

Photooxidation of Benzyl Alcohols with Immobilized Flavins

Adv. Synth. Catal. **2009**, 351, 163–174

 Harald Schmaderer, Petra Hilgers, Robert Lechner, Burkhard König*

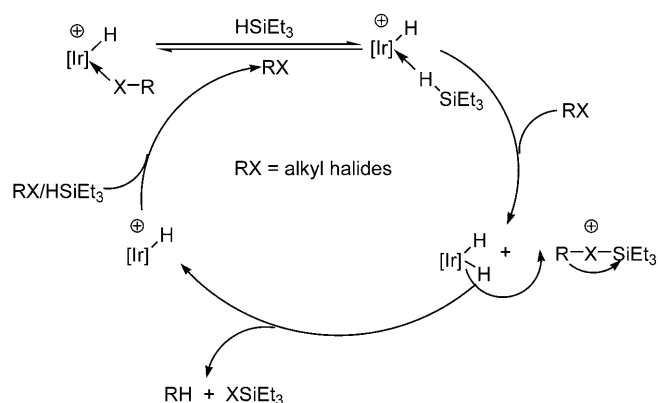


163

- 175** Reduction of Alkyl Halides by Triethylsilane Based on a Cationic Iridium Bis(phosphinite) Pincer Catalyst: Scope, Selectivity and Mechanism

Adv. Synth. Catal. **2009**, 351, 175–187

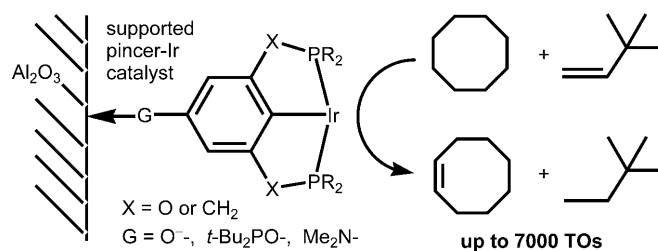
Jian Yang, Maurice Brookhart*



- 188** Highly Active and Recyclable Heterogeneous Iridium Pincer Catalysts for Transfer Dehydrogenation of Alkanes

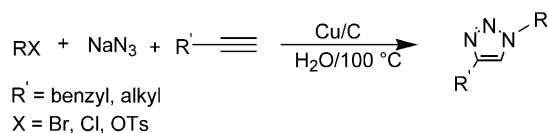
Adv. Synth. Catal. **2009**, 351, 188–206

Zheng Huang, Maurice Brookhart,* Alan S. Goldman,*
Sabuj Kundu, Amlan Ray, Susannah L. Scott,*
Brian C. Vicente



- 207** Copper Nanoparticles on Charcoal for Multicomponent Catalytic Synthesis of 1,2,3-Triazole Derivatives from Benzyl Halides or Alkyl Halides, Terminal Alkynes and Sodium Azide in Water as a Green Solvent

Adv. Synth. Catal. **2009**, 351, 207–218

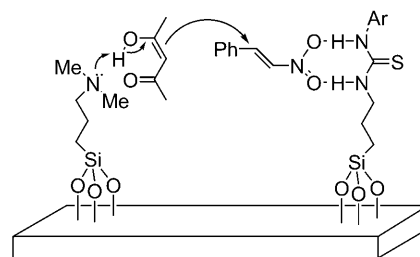


Hashem Sharghi,* Reza Khalifeh, Mohammad Mahdi Doroodmand

- 219** Hybrid Inorganic-Organic Materials Carrying Tertiary Amine and Thiourea Residues Tethered on Mesoporous Silica Nanoparticles: Synthesis, Characterization, and Co-Operative Catalysis

Adv. Synth. Catal. **2009**, 351, 219–229

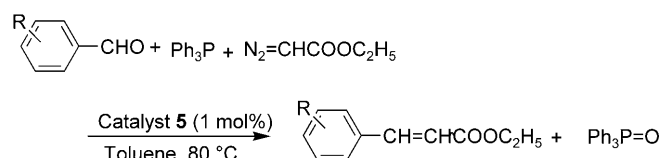
Alessandra Puglisi,* Rita Annunziata, Maurizio Benaglia,*
Franco Cozzi, Antonella Gervasini, Vittorio Bertacche,
Maria Chiara Sala



- 230** An Efficient Synthesis of Poly(ethylene glycol)-Supported Iron(II) Porphyrin using a Click Reaction and its Application for the Catalytic Olefination of Aldehydes

Adv. Synth. Catal. **2009**, 351, 230–234

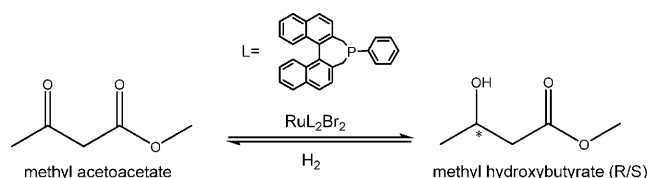
Suman L. Jain, Jomy K. Joseph, Fritz E. Kühn,*
Oliver Reiser*



Kinetic Study of the Asymmetric Hydrogenation of Methyl Acetoacetate in the Presence of a Ruthenium Binaphthophosphepine Complex

Adv. Synth. Catal. **2009**, 351, 235–245

Eva Öchsner, Bastian Etzold, Kathrin Junge, Matthias Beller,* Peter Wasserscheid*

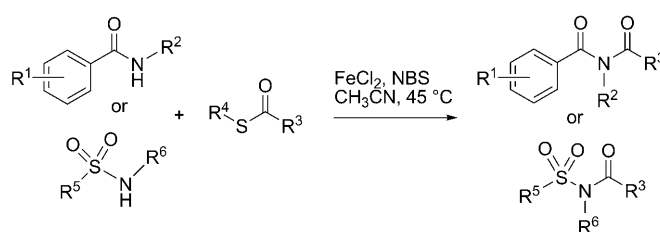


235

Highly Efficient Iron(II) Chloride/*N*-Bromosuccinimide-Mediated Synthesis of Imides and Acylsulfonamides

Adv. Synth. Catal. **2009**, 351, 246–252

Feng Wang, Hongxia Liu, Hua Fu,* Yuyang Jiang,* Yufen Zhao

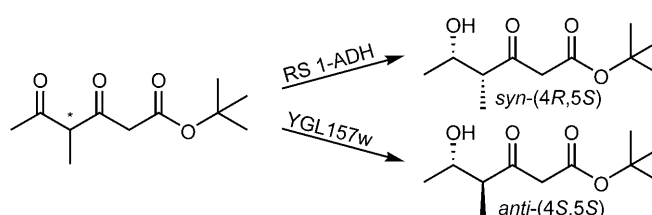


246

Stereoselective Synthesis of Three Isomers of *tert*-Butyl 5-Hydroxy-4-methyl-3-oxohexanoate through Alcohol Dehydrogenase-Catalyzed Dynamic Kinetic Resolution

Adv. Synth. Catal. **2009**, 351, 253–259

Steffen Lüdeke, Michael Richter, Michael Müller*

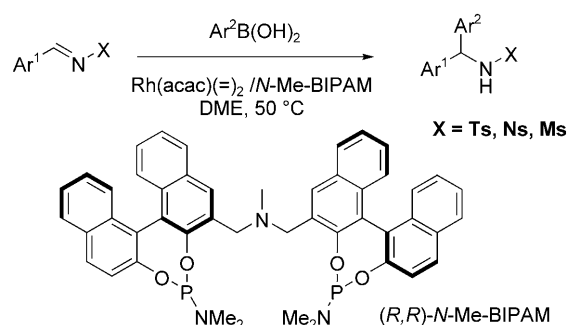


253

An *N*-Linked Bidentate Phosphoramidite Ligand (*N*-Me-BIPAM) for Rhodium-Catalyzed Asymmetric Addition of Arylboronic Acids to *N*-Sulfonylaryldimines

Adv. Synth. Catal. **2009**, 351, 260–270

Kazunori Kurihara, Yasunori Yamamoto,* Norio Miyaoura*



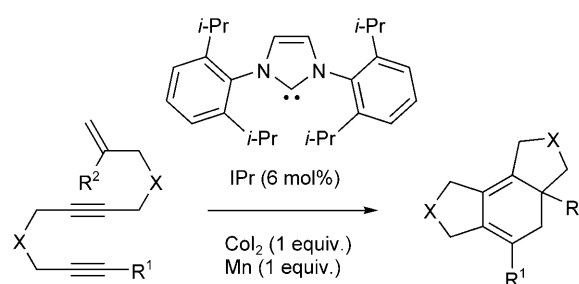
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UPDATES

A Straightforward Procedure for the [2+2+2] Cycloaddition of Enediyne

Adv. Synth. Catal. **2009**, 351, 271–275


Anaïs Geny, Sophie Gaudrel, Franck Slowinski, Muriel Amatore, Gaëlle Chouraqui, Max Malacria, Corinne Aubert,* Vincent Gandon*

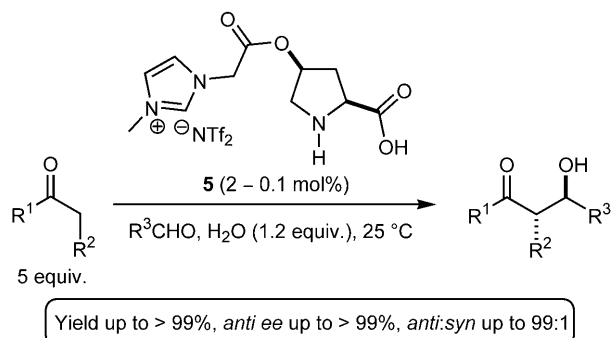


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276 The Ion Tag Strategy as a Route to Highly Efficient Organocatalysts for the Direct Asymmetric Aldol Reaction

Adv. Synth. Catal. **2009**, 351, 276–282

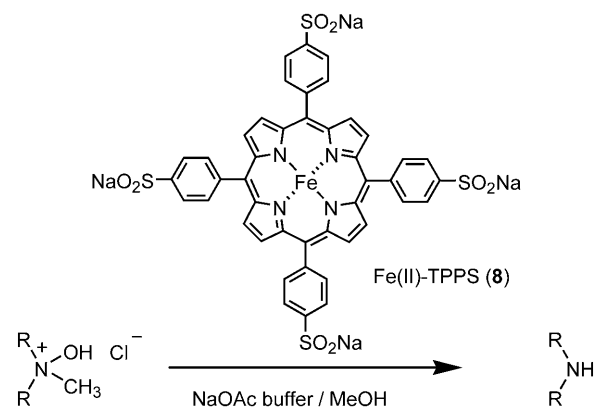
 Marco Lombardo,* Srinivasan Easwar, Filippo Pasi, Claudio Trombini*



283 An Improved Process for the N-Demethylation of Opiate Alkaloids using an Iron(II) Catalyst in Acetate Buffer

Adv. Synth. Catal. **2009**, 351, 283–286

 Gaik Kok, Trent D. Ashton, Peter J. Scammells*



CORRIGENDUM

In the paper by Yongnian Gao and Yulin Lam in Issue 18, 2008, pp. 2937–2946 (DOI: 10.1002/adsc.200800500), in Table 5 on page 2940, the structure of the product for entry 2 should be as follows:

