

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)

ASC
5-Year Impact Factor 2007
5.193
The Cutting Edge
that Stays Sharp!

2009, 351, 9, Pages 1169–1452

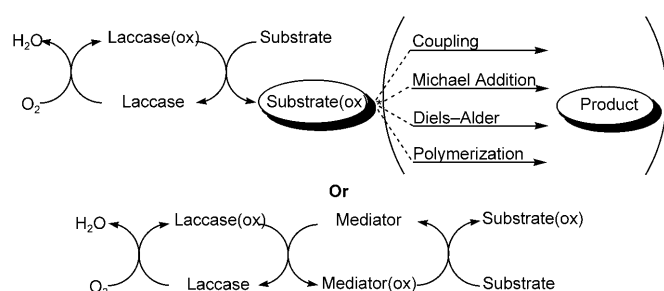
Issue 7 + 8/2009 was published online
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REVIEW

Synthetic Applications of Laccase in Green Chemistry

Adv. Synth. Catal. **2009**, 351, 1187–1209

Suteera Witayakran, Arthur J. Ragauskas*




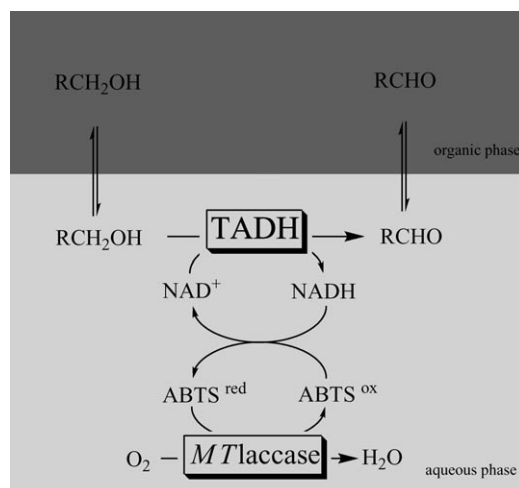
1187

COMMUNICATIONS

- 1211** A New Regeneration System for Oxidized Nicotinamide Cofactors


Adv. Synth. Catal. **2009**, 351, 1211–1216

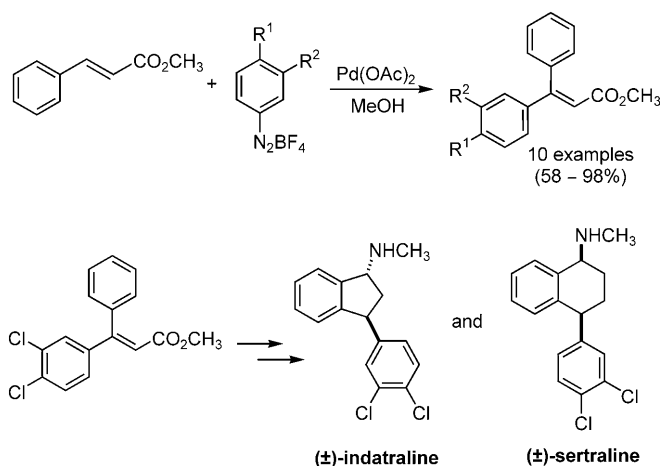
 Seda Aksu, Isabel W. C. E. Arends,* Frank Hollmann*



- 1217** Remarkable Electronic Effect on the Diastereoselectivity of the Heck Reaction of Methyl Cinnamate with Arenediazonium Salts: Formal Total Synthesis of (±)-Indatraline and (±)-Sertraline


Adv. Synth. Catal. **2009**, 351, 1217–1223

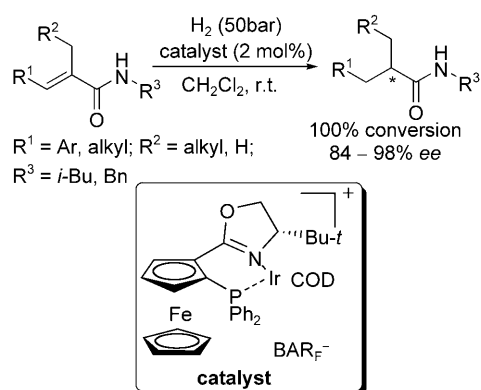
 Julio Cezar Pastre, Carlos Roque Duarte Correia*



- 1224** Highly Enantioselective Construction of the α -Chiral Center of Amides *via* Iridium-Catalyzed Hydrogenation of α,β -Unsaturated Amides


Adv. Synth. Catal. **2009**, 351, 1224–1228

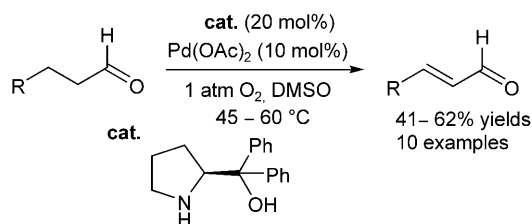
 Wei-Jing Lu, Xue-Long Hou*



- 1229** A Direct Amine-Palladium Acetate Cocatalyzed Saegusa Oxidation Reaction of Unmodified Aldehydes to α,β -Unsaturated Aldehydes

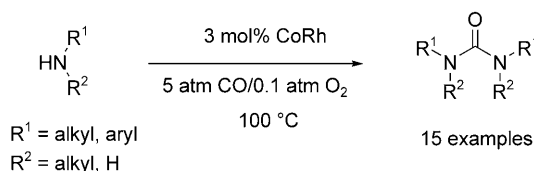
Adv. Synth. Catal. **2009**, 351, 1229–1232

 Jin Zhu, Jie Liu, Ruoqun Ma, Hexin Xie, Jian Li,* Hualiang Jiang, Wei Wang*



Cobalt/Rhodium Heterobimetallic Nanoparticle-Catalyzed Oxidative Carbonylation of Amines in the Presence of Carbon Monoxide and Molecular Oxygen to Ureas

Adv. Synth. Catal. **2009**, 351, 1233–1237

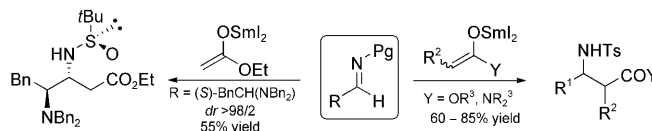


1233

Ji Hoon Park, Jae Chun Yoon, Young Keun Chung*

The Use of Samarium Enolates, A Novel Alternative in the Addition Reactions to Imines. Synthesis of 3-Amino Esters, Amides and Enantiopure 3,4-Diamino Esters

Adv. Synth. Catal. **2009**, 351, 1238–1242

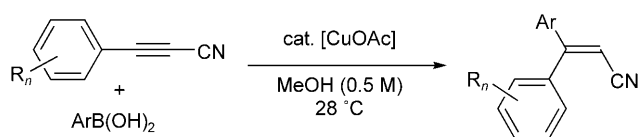


1238

José M. Concellón,* Humberto Rodríguez-Solla, Carmen Simal

Copper-Catalyzed Stereoselective Hydroarylation of 3-Aryl-2-propynenitriles with Arylboronic Acids

Adv. Synth. Catal. **2009**, 351, 1243–1249

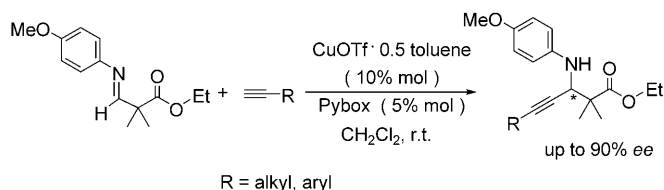


1243

Yoshihiko Yamamoto,* Tsuyoshi Asatani, Naohiro Kirai

Copper(I)-Catalyzed Asymmetric Addition of Terminal Alkynes to β -Imino Esters: An Efficient and Direct Method in the Synthesis of Chiral β^3 -Alkynyl $\beta^{2,2}$ -Dimethyl Amino Acid Derivatives

Adv. Synth. Catal. **2009**, 351, 1250–1254



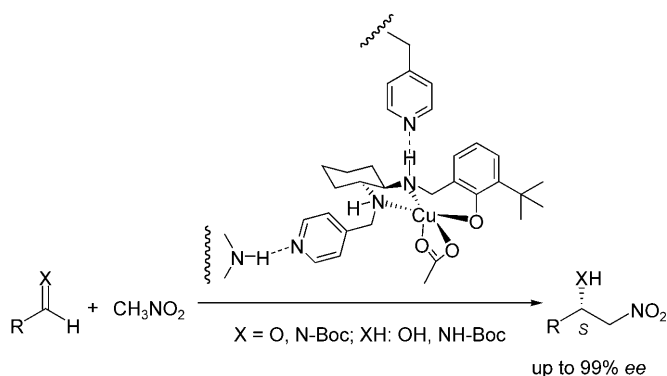
1250

Jun Wang, Zhihui Shao, Kai Ding Wing Yiu Yu* Albert S. C. Chan*

Versatile Supramolecular Copper(II) Complexes for Henry and Aza-Henry Reactions

Adv. Synth. Catal. **2009**, 351, 1255–1262

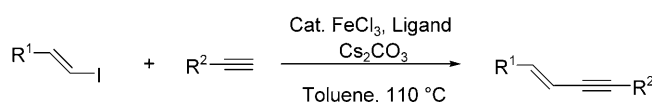
Guoqi Zhang, Eiji Yashima, Wolf-D. Woggon*



1255

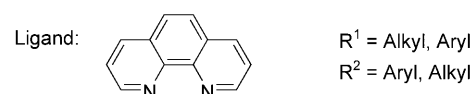
Iron-Catalyzed Cross-Coupling Reactions of Terminal Alkynes with Vinyl Iodides

Adv. Synth. Catal. **2009**, 351, 1263–1267




1263

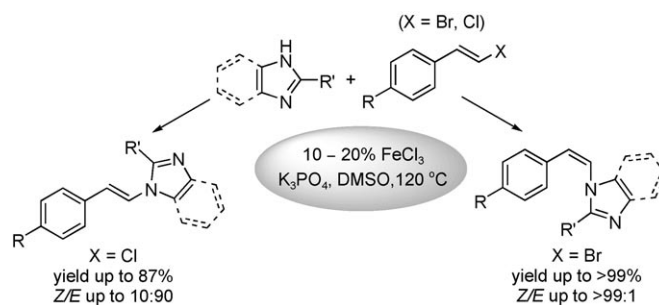
Xin Xie, Xiaobing Xu, Hongfeng Li, Xiaolei Xu, Jingyu Yang, Yanzhong Li*



- 1268** Iron-Catalyzed Cross-Coupling Reaction of Vinyl Bromides or Chlorides with Imidazoles in the Absence of Ligands and Additives


Adv. Synth. Catal. **2009**, 351, 1268–1272

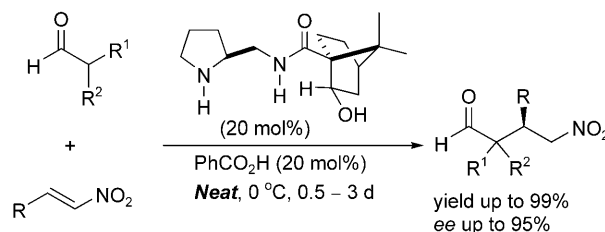
 Jincheng Mao,* Guanlei Xie, Jiaming Zhan, Qiongqiong Hua, Daqing Shi



- 1273** Pyrrolidine-Camphor Derivative as an Organocatalyst for Asymmetric Michael Additions of α,α -Disubstituted Aldehydes to β -Nitroalkenes: Construction of Quaternary Carbon-Bearing Aldehydes under Solvent-Free Conditions


Adv. Synth. Catal. **2009**, 351, 1273–1278

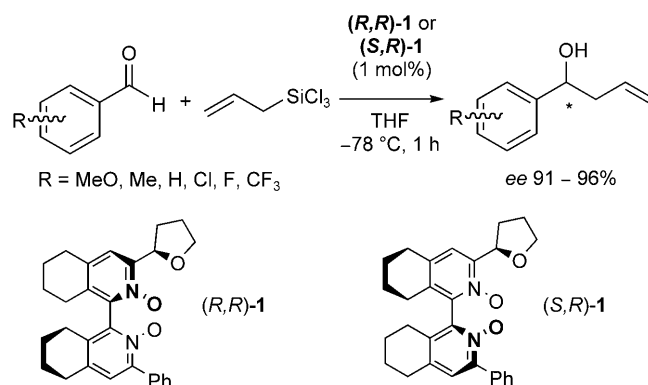
 Chihliang Chang, Ssu-Hsien Li, Raju Jannapu Reddy, Kwunmin Chen*



- 1279** Simple and Fast Synthesis of New Axially Chiral Bipyridine N,N' -Dioxides for Highly Enantioselective Allylation of Aldehydes


Adv. Synth. Catal. **2009**, 351, 1279–1283

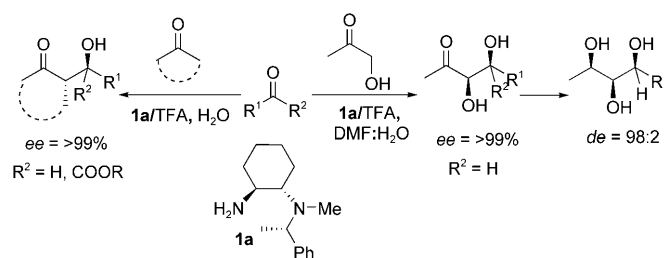
 Aneta Kadlčková, Radim Hrdina, Irena Valterová, Martin Kotora*



- 1284** Highly Enantioselective Organocatalytic *syn*- and *anti*-Aldol Reactions in Aqueous Medium


Adv. Synth. Catal. **2009**, 351, 1284–1288

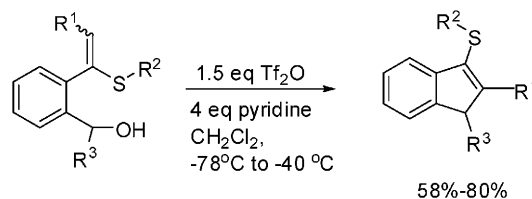
 Monika Raj, Gopal S. Parashari, Vinod K. Singh*



- 1289** Sulfur-Participated Nazarov-Type Cyclization: A Simple and Efficient Synthesis for 3-Thio-1*H*-indenes

Adv. Synth. Catal. **2009**, 351, 1289–1292

 Hongwei Zhou,* Yongfa Xie, Lianjun Ren, Kai Wang

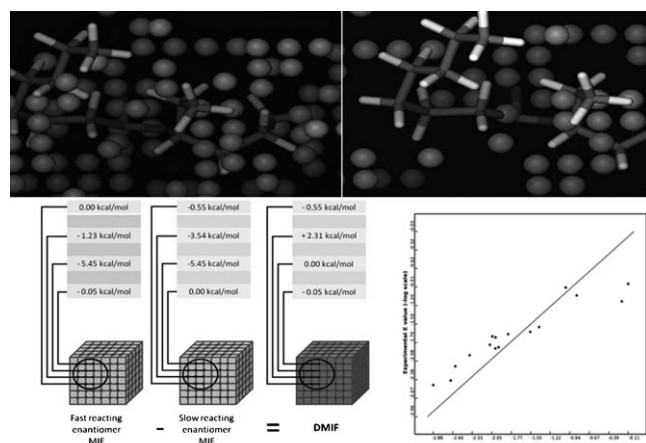


FULL PAPERS

A Three-Dimensional Quantitative Structure-Activity Relationship (3D-QSAR) Model for Predicting the Enantioselectivity of *Candida antarctica* Lipase B

Adv. Synth. Catal. **2009**, 351, 1293–1302

Paolo Braiuca, Knapic Lorena, Valerio Ferrario, Cynthia Ebert, Lucia Gardossi*

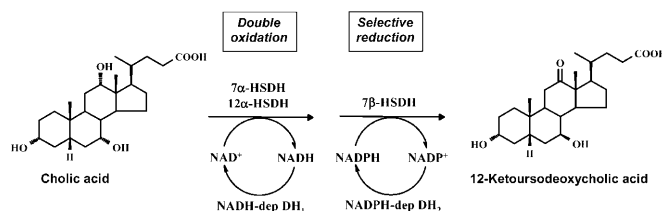


1293

One-Pot Multienzymatic Synthesis of 12-Ketoursodeoxycholic Acid: Subtle Cofactor Specificities Rule the Reaction Equilibria of Five Biocatalysts Working in a Row

Adv. Synth. Catal. **2009**, 351, 1303–1311

Daniela Monti,* Erica Elisa Ferrandi, Ilaria Zanellato, Ling Hua, Fausto Polentini, Giacomo Carrea, Sergio Riva*

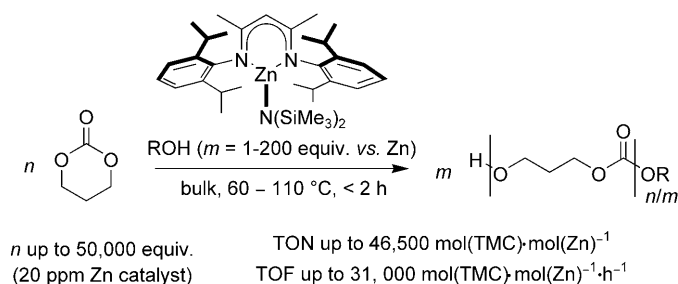


1303

Poly(trimethylene carbonate) from Biometals-Based Initiators/Catalysts: Highly Efficient Immortal Ring-Opening Polymerization Processes

Adv. Synth. Catal. **2009**, 351, 1312–1324

Marion Helou, Olivier Miserque, Jean-Michel Brusson, Jean-François Carpentier,* Sophie M. Guillaume*

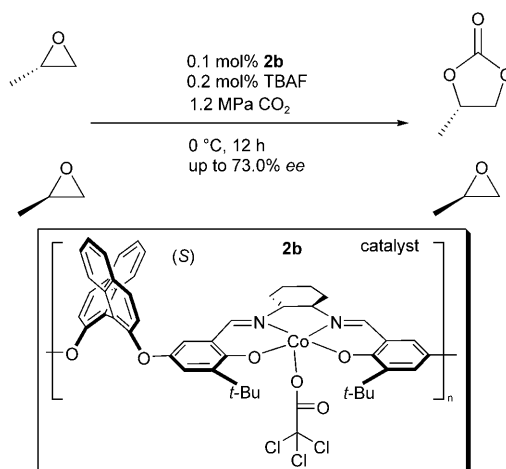


1312


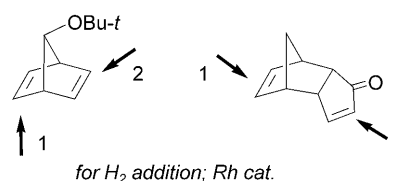

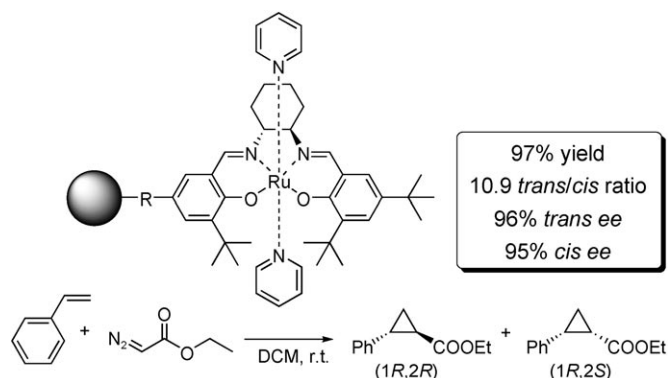

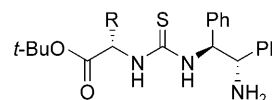
Catalytic Asymmetric Cycloaddition of Carbon Dioxide and Propylene Oxide Using Novel Chiral Polymers of BINOL-Salen-Cobalt(III) Salts

Adv. Synth. Catal. **2009**, 351, 1325–1332


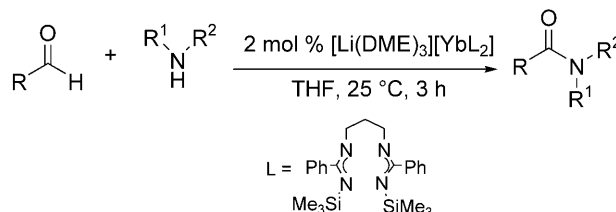

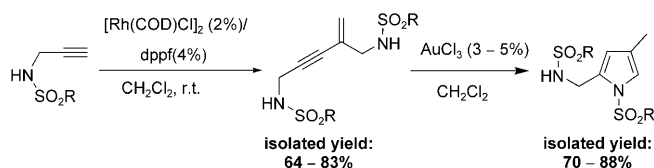
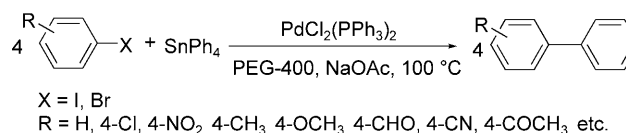
Peng Yan, Huanwang Jing*



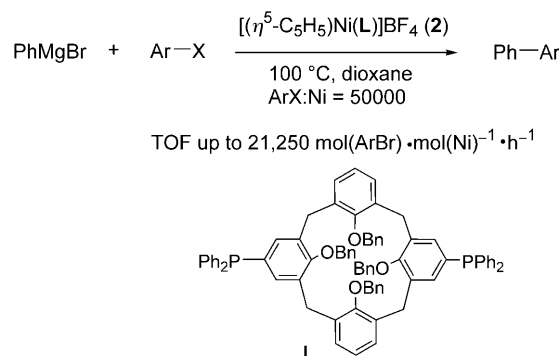
1325

1333 Stereoselectivity in the Rhodium-Catalysed Reductions of Non-Conjugated Dienes*Adv. Synth. Catal.* **2009**, 351, 1333–1343 Bao Nguyen, John M. Brown***1344** Recyclable Polymer- and Silica-Supported Ruthenium(II)-Salen Bis-pyridine Catalysts for the Asymmetric Cyclopropanation of Olefins*Adv. Synth. Catal.* **2009**, 351, 1344–1354 Christopher S. Gill, Krishnan Venkatasubbaiah, Christopher W. Jones***1355** Primary Amine-Thioureas based on *tert*-Butyl Esters of Natural Amino Acids as Organocatalysts for the Michael Reaction*Adv. Synth. Catal.* **2009**, 351, 1355–1362 Christoforos G. Kokotos, George Kokotos*

R = CH₃, CH₂C₆H₅, CH(CH₃)₂, CH₂CO₂Bu-*t*, CH₂CH₂CO₂Bu-*t*, CH₂OBu-*t*, CH(CH₃)OBu-*t*, CH₂C₆H₄OBu-*t*

1363 Anionic Bridged Bis(amidinate) Lithium Lanthanide Complexes: Efficient Bimetallic Catalysts for Mild Amidation of Aldehydes with Amines*Adv. Synth. Catal.* **2009**, 351, 1363–1370 Junfeng Wang, Junmei Li, Fan Xu, Qi Shen***1371** Synthesis of Trisubstituted Pyrroles from Rhodium-Catalyzed Alkyne Head-to-Tail Dimerization and Subsequent Gold-Catalyzed Cyclization*Adv. Synth. Catal.* **2009**, 351, 1371–1377 Hong Mei Peng, Jing Zhao,* Xingwei Li***1378** Atom-Efficient, Palladium-Catalyzed Stille Coupling Reactions of Tetraphenylstannane with Aryl Iodides or Aryl Bromides in Polyethylene Glycol 400 (PEG-400)*Adv. Synth. Catal.* **2009**, 351, 1378–1382 Wen-Jun Zhou, Ke-Hu Wang, Jin-Xian Wang*

Efficient, Nickel-Catalysed Kumada–Tamao–Corriu Cross-Coupling with a Calix[4]arene-Diphosphine Ligand

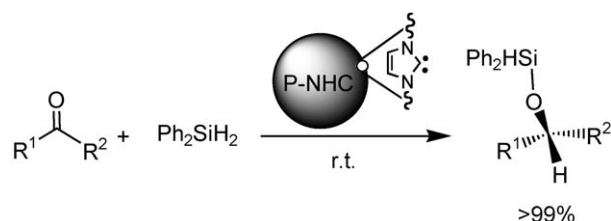
Adv. Synth. Catal. **2009**, 351, 1383–1389Laure Monnereau, David Sémeril,* Dominique Matt,*
Loïc Toupet, Antonio J. Mota

1383

Hydrosilylation of Ketone and Imine over Poly-N-Heterocyclic Carbene Particles

Adv. Synth. Catal. **2009**, 351, 1390–1394

MeiXuan Tan, Yugen Zhang,* Jackie Y. Ying*

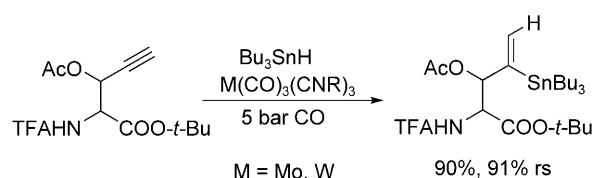


1390

Improved Protocols for Molybdenum- und Tungsten-Catalyzed Hydrostannations

Adv. Synth. Catal. **2009**, 351, 1395–1404

Alexander O. Wesquet, Uli Kazmaier*

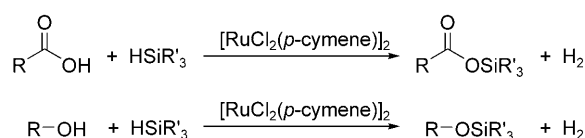


1395

An Efficient Solvent-Free Route to Silyl Esters and Silyl Ethers

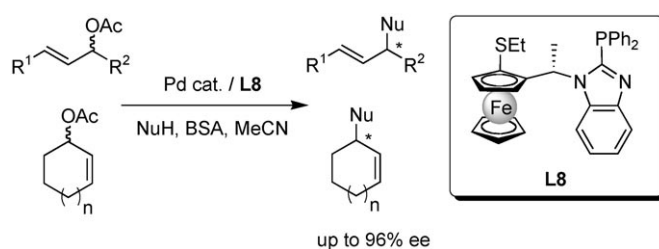
Adv. Synth. Catal. **2009**, 351, 1405–1411

Yuko Ojima, Kazuya Yamaguchi, Noritaka Mizuno*



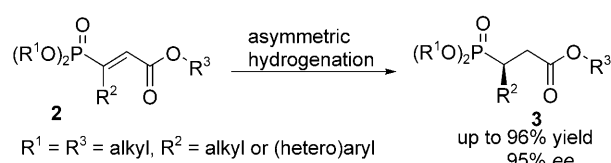
1405

Effective Chiral Ferrocenyl Phosphine-Thioether Ligands in Enantioselective Palladium-Catalyzed Allylic Alkylations

Adv. Synth. Catal. **2009**, 351, 1412–1422 Hong Yee Cheung, Wing-Yiu Yu, Terry T. L. Au-Yeung,
Zhongyuan Zhou, Albert S. C. Chan*

1412

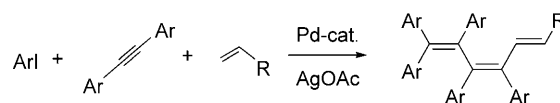
Asymmetric Hydrogenation of α,β-Unsaturated Ester-Phosphonates

Adv. Synth. Catal. **2009**, 351, 1423–1430 Yange Huang, Florian Berthiol, Bart Stegink,
Michael M. Pollard, Adriaan J. Minnaard*

1423

UPDATES

- 1431** Palladium-Catalyzed Three-Component 1:2:1 Coupling of Aryl Iodides, Alkynes, and Alkenes to Produce 1,3,5-Hexatriene Derivatives



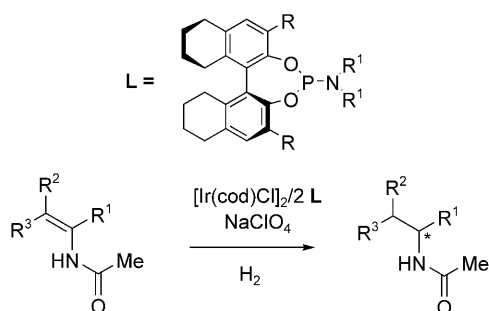
Adv. Synth. Catal. **2009**, 351, 1431–1436

 Hakaru Horiguchi, Koji Hirano, Tetsuya Satoh,*
Masahiro Miura*

- 1437** Iridium-Catalysed Asymmetric Hydrogenation of Enamides in the Presence of 3,3'-Substituted H8-Phosphoramidites


Adv. Synth. Catal. **2009**, 351, 1437–1441

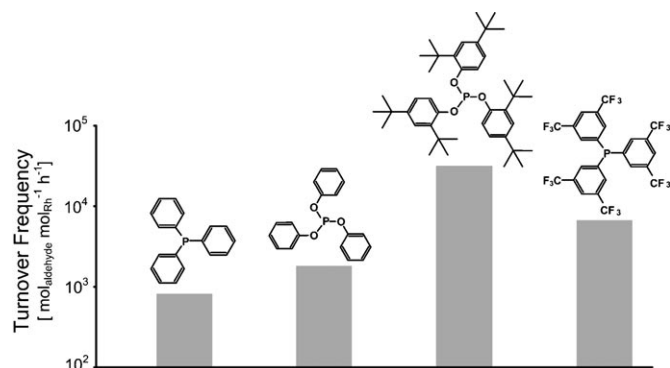
Giulia Erre, Stephan Enthaler, Kathrin Junge, Daniele Addis,
Matthias Beller*



- 1442** Efficient Hydroformylation in Dense Carbon Dioxide using Phosphorus Ligands without Perfluoroalkyl Substituents

Adv. Synth. Catal. **2009**, 351, 1442–1450

 Ard C. J. Koeken,* Nieck E. Benes, Leo J. P. van den Broeke,
Jos T. F. Keurentjes



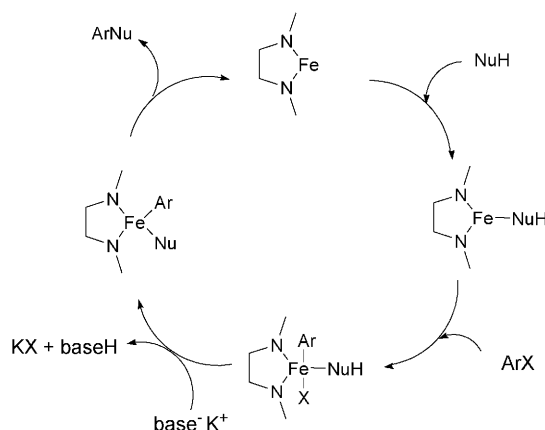
CORRIGENDA

In the paper by Yong-Chua Teo in Issue 5, 2009, pp. 720–724 (DOI: 10.1002/adsc.200800746), the author failed to make direct reference to very similar work published by Correa and Bolm in 2007 (reference 4r: A. Correa, C. Bolm, *Angew. Chem.* **2007**, *119*, 9018; *Angew. Chem. Int. Ed.* **2007**, *46*, 8862). The paper by Correa and Bolm had already reported very similar screening for the same reaction in toluene with the same starting materials and had already disclosed the best catalyst system, FeCl_3 (10 mol%), dmeda (20 mol%), K_3PO_4 (2 equiv.), the same optimized catalyst system reported by Teo for the reaction in water. Tables 3 and 4 in the paper by Correa and Bolm report almost all the substrates and products subsequently reported in the Teo paper in Tables 2 and 3; again the difference being that Teo used water as solvent instead of toluene. The tolerance of the cross-coupling process to water had also been disclosed in the paper by Correa and Bolm.

In addition, the author also failed to cross reference very similar work using a cobalt catalyst system, which he simultaneously published in Chemistry, a European Journal (Y.-C. Teo, G.-L. Chua, *Chem. Eur. J.* **2009**, *15*, 3072). The cobalt paper and the iron paper report similar goals, reactions, ligand scanning, starting materials, products, and conclusions.

The author apologizes for these oversights and agrees that the record be set straight by means of this corrigendum.

Finally, in Scheme 1 on page 723, the structure at the top of the catalytic cycle should be without "X". The correct scheme is as follows:



In the paper by Jeanne L. Bolliger and Christian M. Frech in Issue 6, 2009, pp. 891–902 (DOI: 10.1002/adsc.200900112), the graphic abstract in the table of contents of the issue on page 809 incorrectly shows two methyl groups bound to palladium in the pincer complex, which should be removed. The correct graphic abstract is as follows:

