

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)

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2009, 351, 11 + 12, Pages 1701–2040

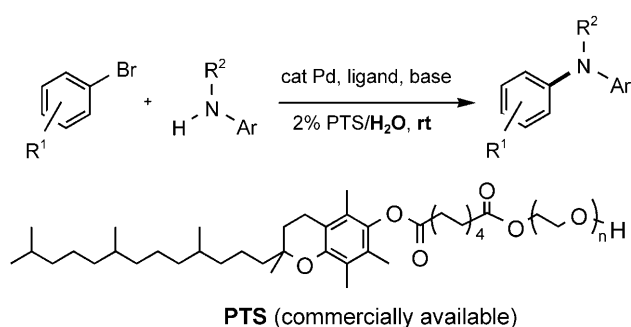
Issue 10/2009 was published online on
July 8, 2009

COMMUNICATIONS

Aminations of Aryl Bromides in Water at Room Temperature

Adv. Synth. Catal. **2009**, 351, 1717–1721


 Bruce H. Lipshutz,* David W. Chung, Brian Rich

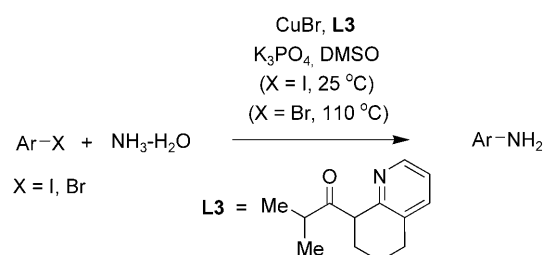


1717

An Efficient Copper-Catalyzed Amination of Aryl Halides by Aqueous Ammonia

Adv. Synth. Catal. **2009**, 351, 1722–1726


 Deping Wang, Qian Cai, Ke Ding*

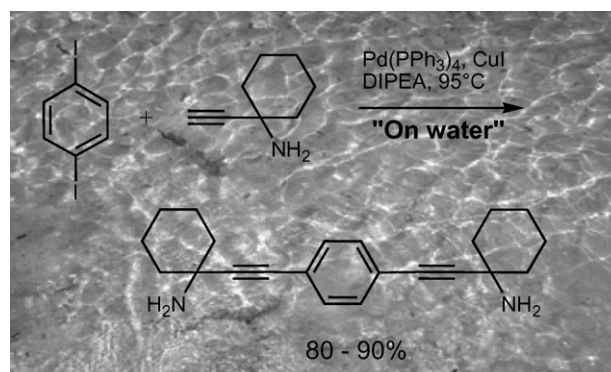


1722

- 1727** Conventional Tetrakis(triphenylphosphine)palladium-Copper(I) Iodide-Catalyzed Sonogashira Coupling of Free and BOC-Protected Propargylic Amines On Water


Adv. Synth. Catal. **2009**, 351, 1727–1731

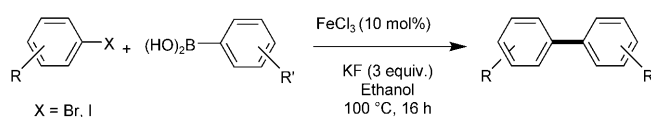
 Bartomeu Soberats, Luis Martínez, Manuel Vega, Carmen Rotger, Antoni Costa*



- 1732** Iron-Catalyzed Suzuki–Miyaura Cross-Coupling Reaction


Adv. Synth. Catal. **2009**, 351, 1732–1736

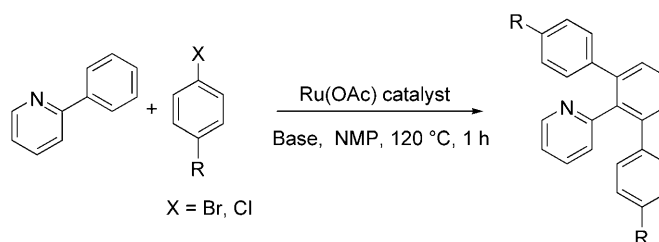
 David Bézier, Christophe Darcel*



- 1737** Ruthenium(II) Acetate Catalyst for Direct Functionalisation of sp^2 -C–H Bonds with Aryl Chlorides and Access to Tris-Heterocyclic Molecules


Adv. Synth. Catal. **2009**, 351, 1737–1743

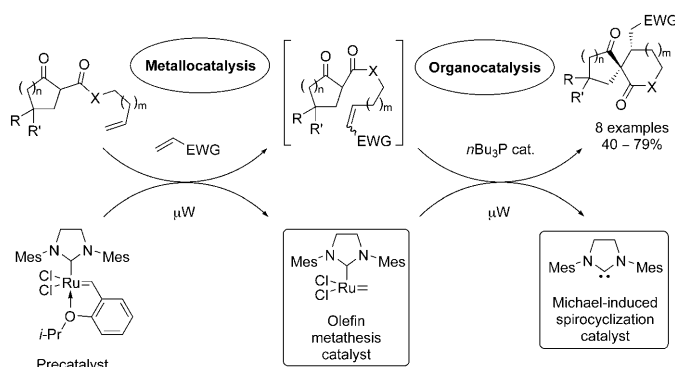
 Franc Požgan, Pierre H. Dixneuf*



- 1744** Organocatalytic Activity of N-Heterocyclic Carbenes in the Michael Addition of 1,3-Dicarbonyl Compounds: Application to a Stereoselective Spirocyclization Sequence

Adv. Synth. Catal. **2009**, 351, 1744–1748

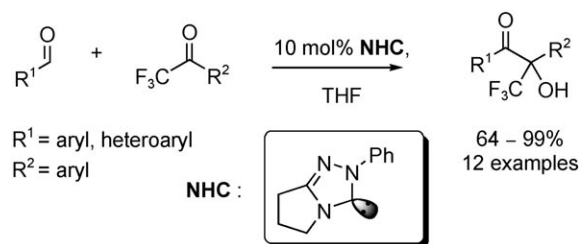
 Thomas Boddaert, Yoann Coquerel,* Jean Rodriguez*



- 1749** A Direct Intermolecular Cross-Benzoin Type Reaction: N-Heterocyclic Carbene-Catalyzed Coupling of Aromatic Aldehydes with Trifluoromethyl Ketones

Adv. Synth. Catal. **2009**, 351, 1749–1752

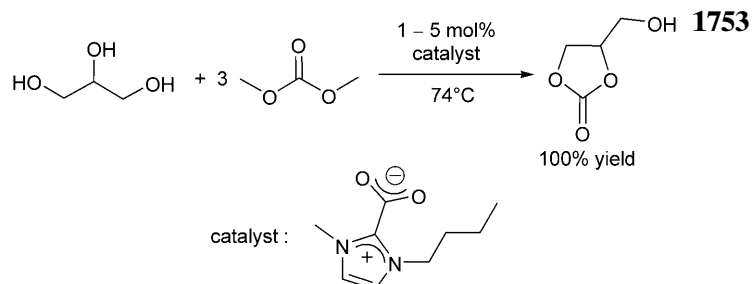
Dieter Enders,* Alexander Henseler



Imidazolium-2-Carboxylate as an Efficient, Expeditious and Eco-Friendly Organocatalyst for Glycerol Carbonate Synthesis

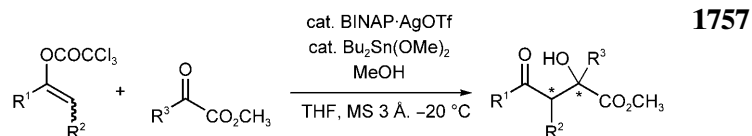
Adv. Synth. Catal. **2009**, 351, 1753–1756

Prashant U. Naik, Laetitia Petitjean, Karima Refes, Michel Picquet,* Laurent Plasseraud*



Asymmetric Aldol Reaction of Ketones with Alkenyl Trichloroacetates Catalyzed by Dibutyltin Dimethoxide and BINAP-Silver(I) Complex: Construction of a Chiral Tertiary Carbon Center

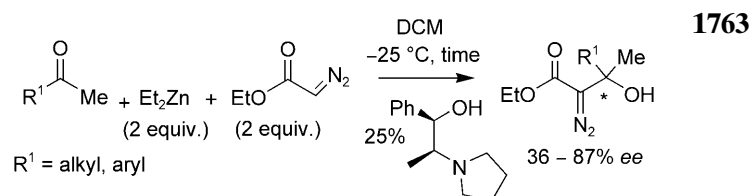
Adv. Synth. Catal. **2009**, 351, 1757–1762



Akira Yanagisawa,* Yuuki Terajima, Kazuma Sugita, Kazuhiro Yoshida

The First Catalytic Enantioselective Aldol-Type Reaction of Ethyl Diazoacetate to Ketones

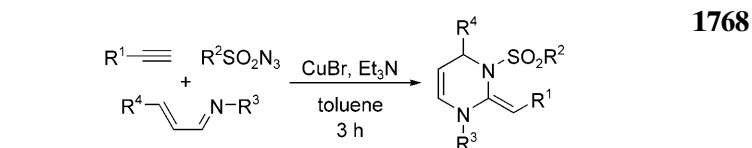
Adv. Synth. Catal. **2009**, 351, 1763–1767



Fides Benfatti, Seda Yilmaz, Pier Giorgio Cozzi*

Copper-Catalyzed One-Pot Synthesis of 2-Alkylidene-1,2,3,4-tetrahydropyrimidines

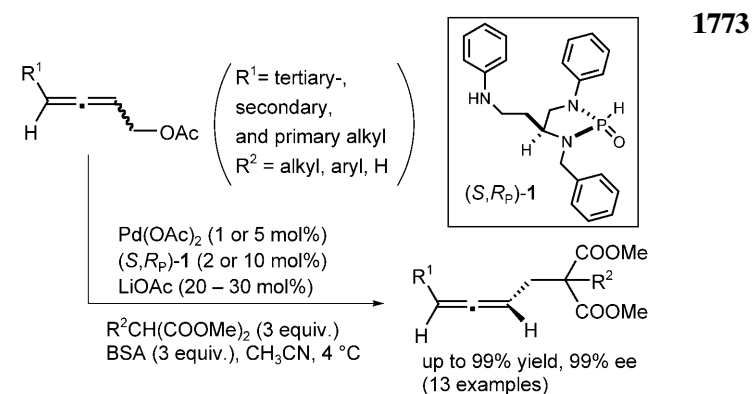
Adv. Synth. Catal. **2009**, 351, 1768–1772



Wei Lu, Wangze Song, Deng Hong, Ping Lu, Yanguang Wang*

Palladium-Catalyzed Asymmetric Allylic Alkylation of 2,3-Allenyl Acetates Using a Chiral Diaminophosphine Oxide

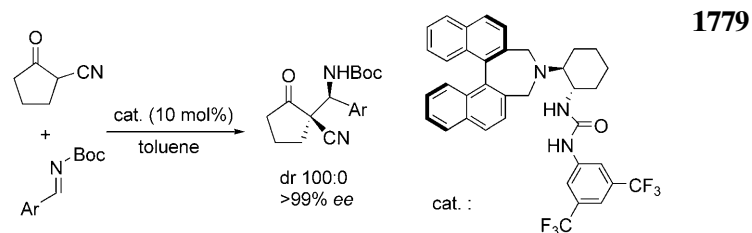
Adv. Synth. Catal. **2009**, 351, 1773–1778



Tetsuhiro Nemoto, Mutsumi Kanematsu, Shinji Tamura, Yasumasa Hamada*

Enantio- and Diastereoselective Mannich-Type Reactions of α -Cyano Ketones with *N*-Boc Aldimines Catalyzed by Chiral Bifunctional Urea

Adv. Synth. Catal. **2009**, 351, 1779–1782

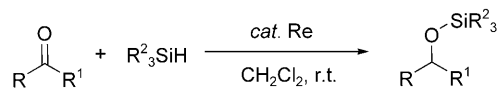


Ju Hee Lee, Dae Young Kim*

- 1783** A Convenient and Efficient Rhenium-Catalyzed Hydrosilylation of Ketones and Aldehydes

Adv. Synth. Catal. **2009**, 351, 1783–1788

Hailin Dong, Heinz Berke*




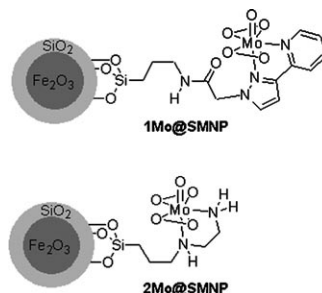
R, R² = alkyl, aryl

R¹ = H, alkyl, aryl

- 1789** Nanoparticle Supported, Magnetically Recoverable Oxodiperoxo Molybdenum Complexes: Efficient Catalysts for Selective Epoxidation Reactions


Adv. Synth. Catal. **2009**, 351, 1789–1795

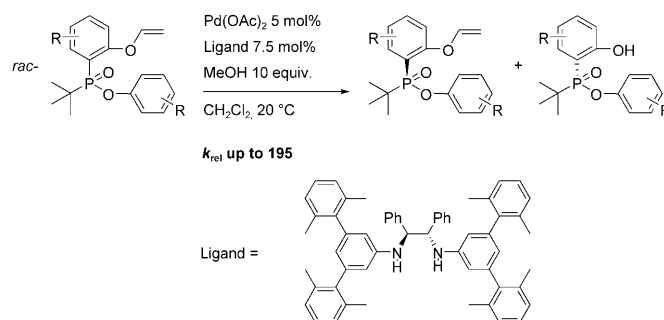
 Sankaranarayananpillai Shylesh, Julia Schweizer, Serhiy Demeshko, Volker Schünemann, Stefan Ernst, Werner R. Thiel*



- 1796** Kinetic Resolution of P-Chirogenic Compounds by Palladium-Catalyzed Alcoholysis of Vinyl Ethers


Adv. Synth. Catal. **2009**, 351, 1796–1800

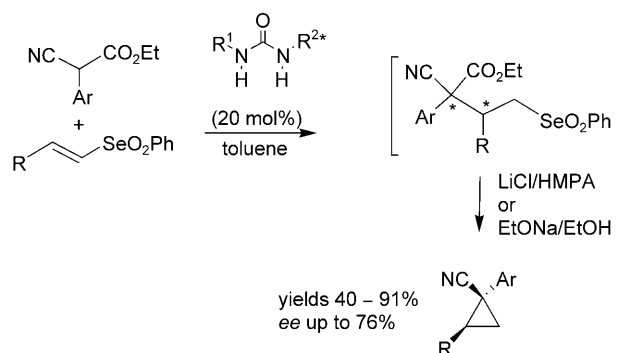
 Hisashi Itoh, Eiji Yamamoto, Shigeyuki Masaoka, Ken Sakai, Makoto Tokunaga*



- 1801** A New Stereoselective Synthesis of Cyclopropanes Containing Quaternary Stereocentres *via* Organocatalytic Michael Addition to Vinyl Selenones

Adv. Synth. Catal. **2009**, 351, 1801–1806

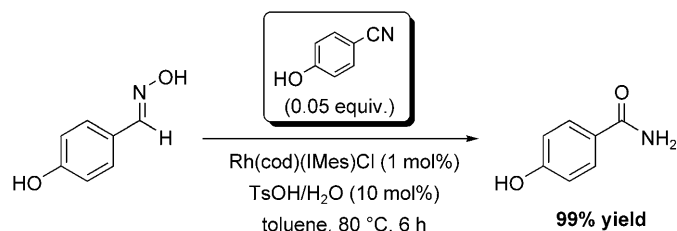
 Francesca Marini,* Silvia Sternativo, Francesca Del Verme, Lorenzo Testaferri, Marcello Tiecco



- 1807** Significant Self-Acceleration Effects of Nitrile Additives in the Rhodium-Catalyzed Conversion of Aldoximes to Amides: A New Mechanistic Aspect

Adv. Synth. Catal. **2009**, 351, 1807–1812

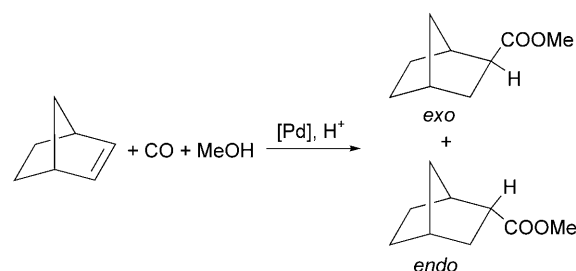
Min Kim, Jinwoo Lee, Hee-Yoon Lee,* Sukbok Chang*



Unprecedented Chemo- and Stereoselective Palladium-Catalysed Methoxycarbonylation of Norbornene

Adv. Synth. Catal. **2009**, 351, 1813–1816

Carolina Blanco, Aurora Ruiz,* Cyril Godard,
Nicolas Fleury-Brégeot, Angela Marinetti, Carmen Claver*



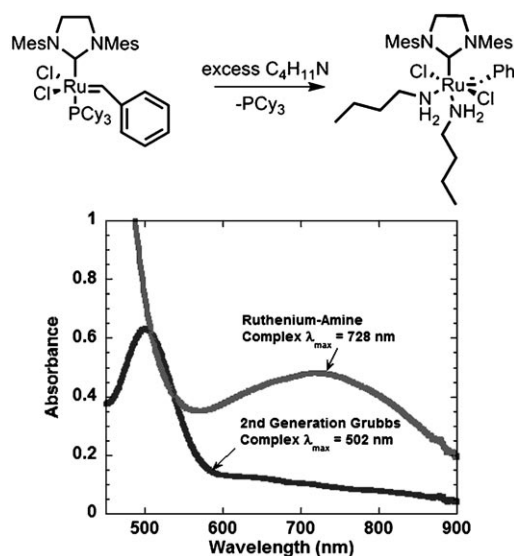
1813

FULL PAPERS

Stability of Second Generation Grubbs' Alkylidenes to Primary Amines: Formation of Novel Ruthenium-Amine Complexes

Adv. Synth. Catal. **2009**, 351, 1817–1825

Gerald O. Wilson, Keith A. Porter, Haim Weissman,
Scott R. White, Nancy R. Sottos, Jeffrey S. Moore*

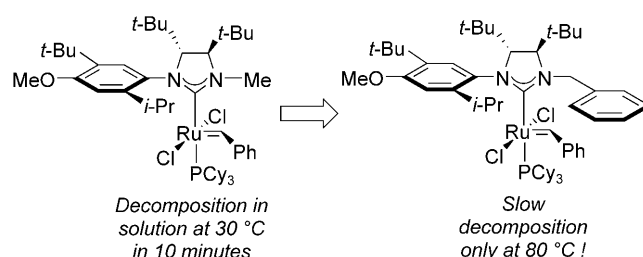


1817

Improved Chiral Olefin Metathesis Catalysts: Increasing the Thermal and Solution Stability *via* Modification of a C₁-Symmetrical N-Heterocyclic Carbene Ligand

Adv. Synth. Catal. **2009**, 351, 1826–1832

Jolaine Savoie, Brice Stenne, Shawn K. Collins*

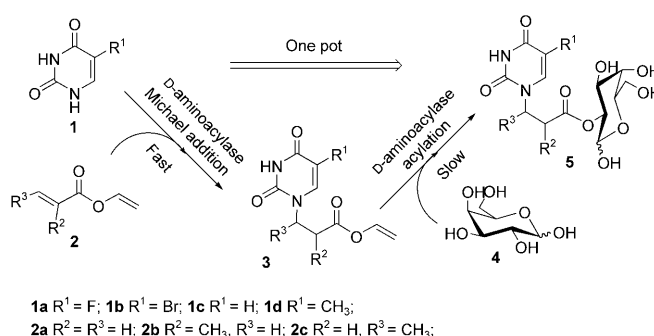


1826

Promiscuous Zinc-Dependent Acylase-Mediated One-Pot Synthesis of Monosaccharide-Containing Pyrimidine Derivatives in Organic Medium

Adv. Synth. Catal. **2009**, 351, 1833–1841


Qi Wu, Jian-Ming Xu, Li Xia, Jun-Liang Wang, Xian-Fu Lin*

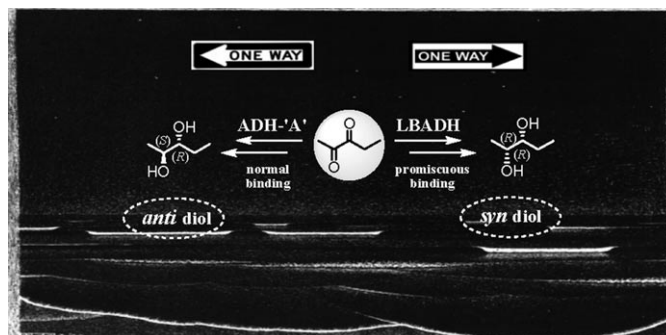


1833

1842 Promiscuous Substrate Binding Explains the Enzymatic Stereo- and Regiocontrolled Synthesis of Enantiopure Hydroxy Ketones and Diols

Adv. Synth. Catal. **2009**, 351, 1842–1848

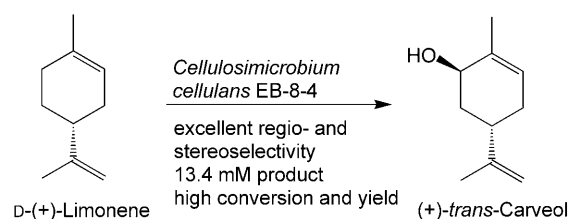
 Marcela Kurina-Sanz,* Fabricio R. Bisogno, Iván Lavandera, Alejandro A. Orden, Vicente Gotor*



1849 Regio- and Stereoselective Allylic Hydroxylation of D-Limonene to (+)-*trans*-Carveol with *Cellulosimicrobium cellulans* EB-8-4

Adv. Synth. Catal. **2009**, 351, 1849–1856

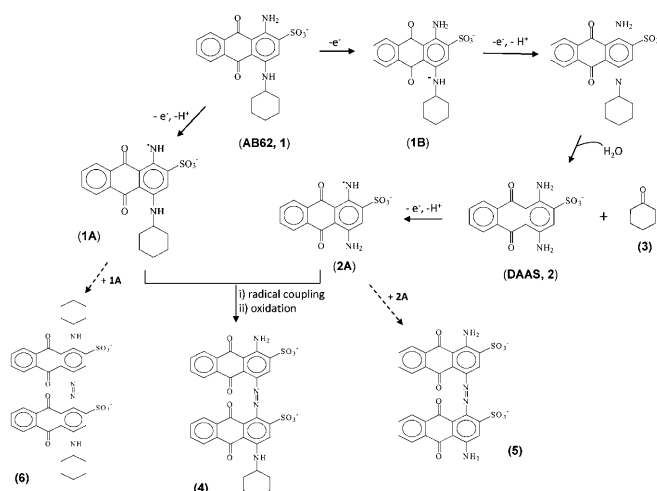
Zunsheng Wang, Felicia Lie, Estella Lim, Keyang Li, Zhi Li*



1857 On the Mechanism of Biotransformation of the Anthraquinonic Dye Acid Blue 62 by Laccases

Adv. Synth. Catal. **2009**, 351, 1857–1865

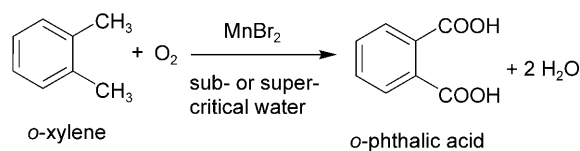
Luciana Pereira, Ana V. Coelho, Cristina A. Viegas, Christelle Ganachaud, Gilles Iacazio, Thierry Tron M. Paula Robalo, Lúcia O. Martins*



1866 Prevention of Manganese Precipitation during the Continuous Selective Partial Oxidation of Methyl Aromatics with Molecular Oxygen in Supercritical Water

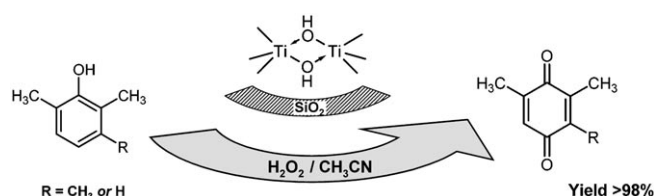
Adv. Synth. Catal. **2009**, 351, 1866–1876

Joan Fraga-Dubreuil, Eduardo Garcia-Verdugo, Paul A. Hamley, Eduardo Perez, Ian Pearson, W. Barry Thomas, Duncan Housley, Walt Partenheimer,* Martyn Poliakoff*



Highly Selective Oxidation of Alkylphenols to Benzoquinones with Hydrogen Peroxide over Silica-Supported Titanium Catalysts: Titanium Cluster Site versus Titanium Single Site

Adv. Synth. Catal. **2009**, 351, 1877–1889

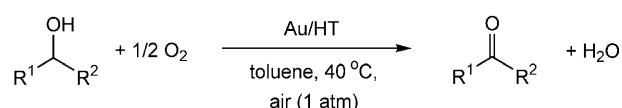


1877

Oxana A. Kholdeeva,* Irina D. Ivanchikova,
Matteo Guidotti,* Claudio Pirovano, Nicoletta Ravasio,
Marina V. Barmatova, Yurii A. Chesalov

Efficient Aerobic Oxidation of Alcohols using a Hydrotalcite-Supported Gold Nanoparticle Catalyst

Adv. Synth. Catal. **2009**, 351, 1890–1896

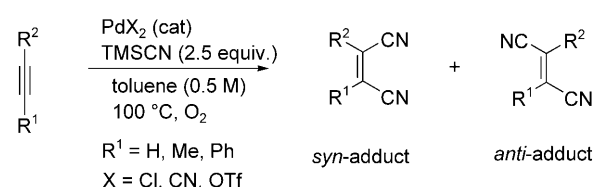


1890

Takato Mitsudome, Akifumi Noujima, Tomoo Mizugaki,
Koichiro Jitsukawa, Kiyotomi Kaneda*

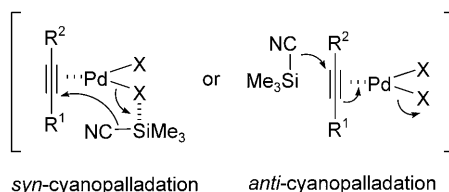
Catalytic 1,2-Dicyanation of Alkynes by Palladium(II) under Aerobic Conditions

Adv. Synth. Catal. **2009**, 351, 1897–1904



1897

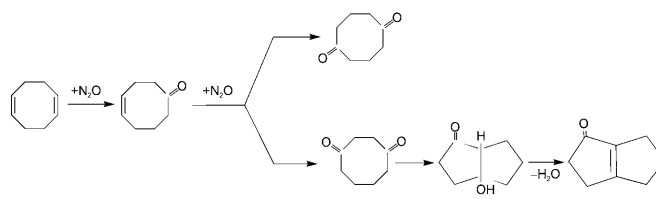
Shigeru Arai,* Takashi Sato, Atsushi Nishida



Ketonization of 1,5-Cyclooctadiene by Nitrous Oxide

Adv. Synth. Catal. **2009**, 351, 1905–1911

Dmitry P. Ivanov,* Konstantin A. Dubkov,
Dmitry E. Babushkin, Sergey V. Semikolenov,
Gennady I. Panov*

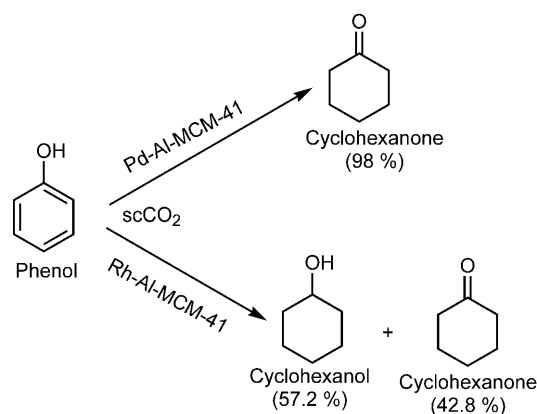


1905

Hydrogenation of Phenol in Supercritical Carbon Dioxide Catalyzed by Palladium Supported on Al-MCM-41: A Facile Route for One-Pot Cyclohexanone Formation

Adv. Synth. Catal. **2009**, 351, 1912–1924


M. Chatterjee,* H. Kawanami,* M. Sato, A. Chatterjee,
T. Yokoyama, T. Suzuki

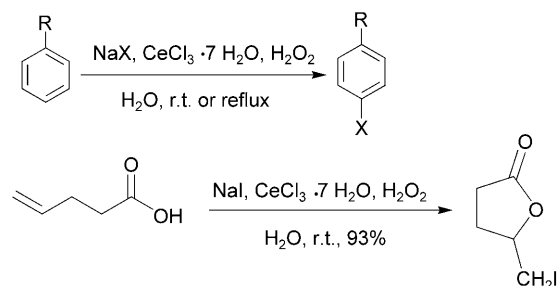


1912

- 1925** Highly Efficient Halogenation of Organic Compounds with Halides Catalyzed by Cerium(III) Chloride Heptahydrate Using Hydrogen Peroxide as the Terminal Oxidant in Water


Adv. Synth. Catal. **2009**, 351, 1925–1932

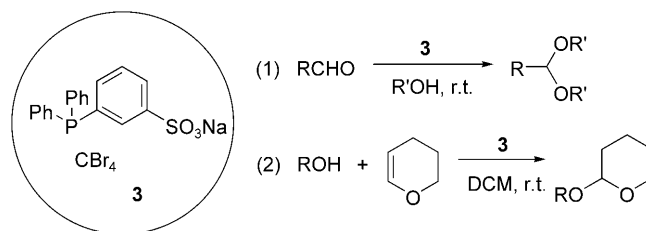
 Habib Firouzabadi,* Nasser Iranpoor,* Somayeh Kazemi, Arash Ghaderi, Atefeh Garzan



- 1933** Carbon Tetrabromide/Sodium Triphenylphosphine-*m*-sulfonate (TPPMS) as an Efficient and Easily Recoverable Catalyst for Acetalization and Tetrahydropyranylation Reactions

Adv. Synth. Catal. **2009**, 351, 1933–1938

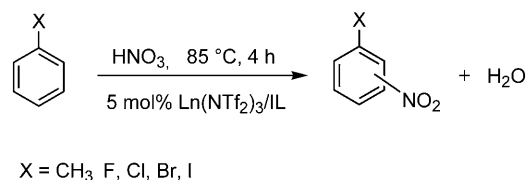
 Congde Huo, Tak Hang Chan*



- 1939** Lanthanide Bis[(trifluoromethyl)sulfonyl]imides as Reusable Catalysts for Mononitration of Substituted Benzenes in Ionic Liquids

Adv. Synth. Catal. **2009**, 351, 1939–1945

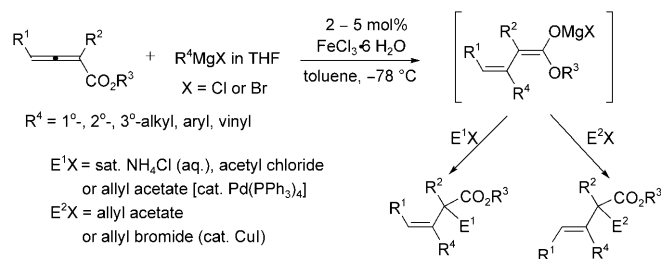
Shuojin Wang, Shaojie Jiang, Jin Nie*



- 1946** Ferric Chloride Hexahydrate-Catalyzed Highly Regio- and Stereoselective Conjugate Addition Reaction of 2,3-Alkenoates with Grignard Reagents: An Efficient Synthesis of β,γ -Alkenoates

Adv. Synth. Catal. **2009**, 351, 1946–1954

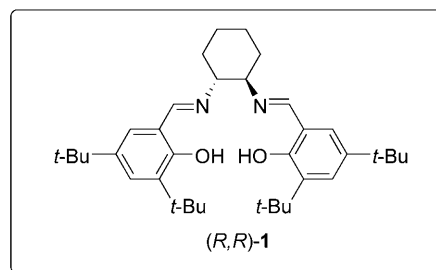
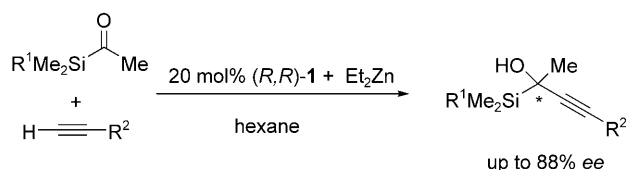
 Guobi Chai, Zhan Lu, Chunling Fu, Shengming Ma*



- 1955** Zinc-Salen-Catalyzed Asymmetric Alkynylation of Alkyl Acylsilanes


Adv. Synth. Catal. **2009**, 351, 1955–1960

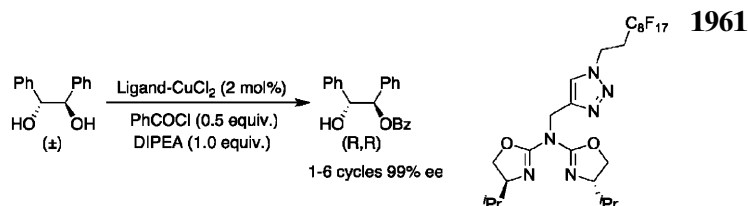
Feng-Quan Li, Shi Zhong, Gui Lu,* Albert S. C. Chan*



Combining Fluorous and Triazole Moieties for the Tagging of Chiral Azabis(oxazoline) Ligands


Adv. Synth. Catal. **2009**, 351, 1961–1967

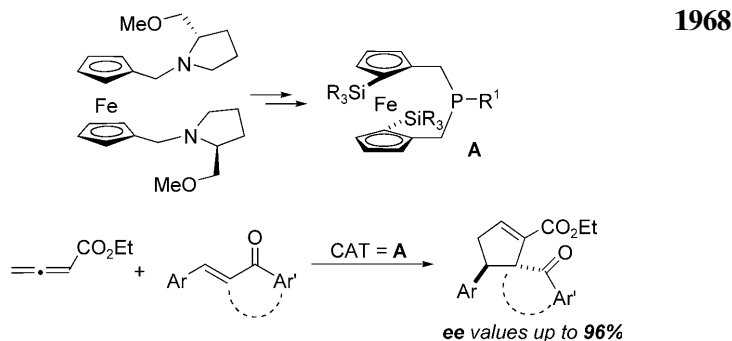
 Ramesh Rasappan, Tobias Olbrich, Oliver Reiser*



Synthesis of Chiral 2-Phospha[3]ferrocenophanes and their Behaviour as Organocatalysts in [3+2] Cyclization Reactions

Adv. Synth. Catal. **2009**, 351, 1968–1976

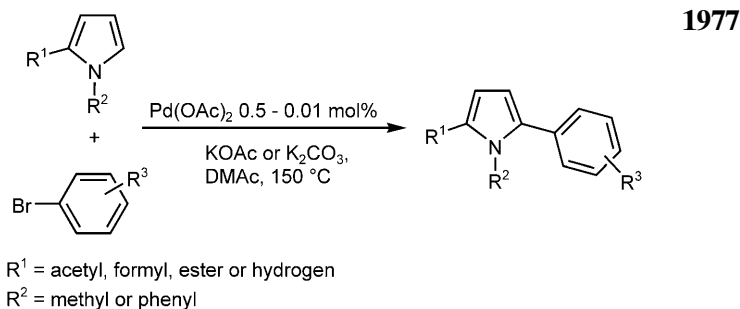
 Arnaud Voituriez, Armen Panossian, Nicolas Fleury-Brégeot, Pascal Retailleau, Angela Marinetti*



Regioselective C-2 or C-5 Direct Arylation of Pyrroles with Aryl Bromides using a Ligand-Free Palladium Catalyst


Adv. Synth. Catal. **2009**, 351, 1977–1990

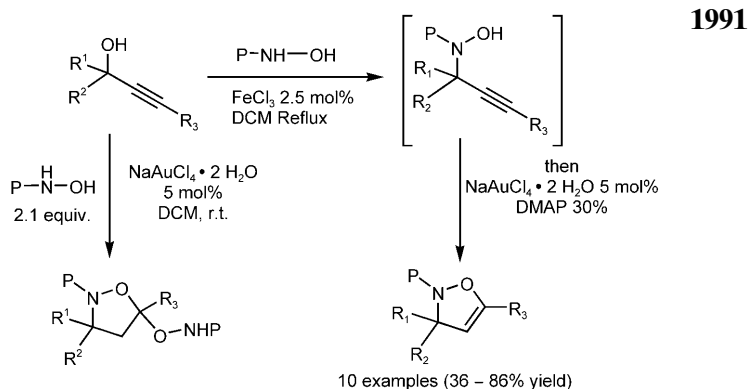
Julien Roger, Henri Doucet*



A Dual Gold-Iron Catalysis for a One-Pot Synthesis of 2,3-Dihydroisoxazoles from Propargylic Alcohols and N-Protected Hydroxylamines


Adv. Synth. Catal. **2009**, 351, 1991–1998

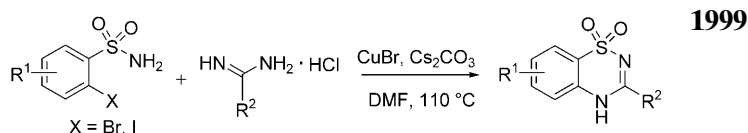
 Olivier Debleds, Christophe Dal Zotto, Emmanuel Vrancken, Jean-Marc Campagne,* Pascal Retailleau



Copper-Catalyzed Synthesis of 1,2,4-Benzothiadiazine 1,1-Dioxide Derivatives by Coupling of 2-Halobenzenesulfonamides with Amidines

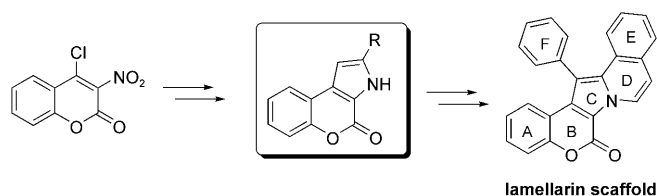
Adv. Synth. Catal. **2009**, 351, 1999–2004

 Daoshan Yang, Hongxia Liu, Haijun Yang, Hua Fu,* Liming Hu,* Yuyang Jiang, Yufen Zhao



- 2005** A New Approach to Pyrrolocoumarin Derivatives by Palladium-Catalyzed Reactions: Expedient Construction of Polycyclic Lamellarin Scaffold

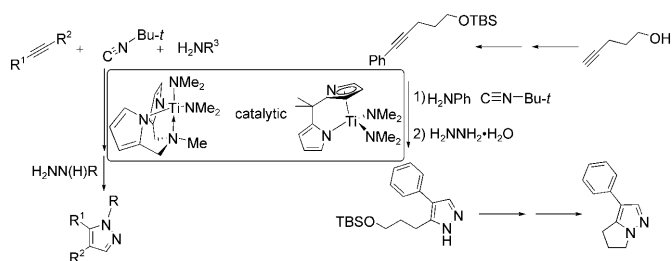
Adv. Synth. Catal. **2009**, 351, 2005–2012



Lei Chen, Ming-Hua Xu*

- 2013** Pyrazole Synthesis Using a Titanium-Catalyzed Multicomponent Coupling Reaction and Synthesis of Withasomnine

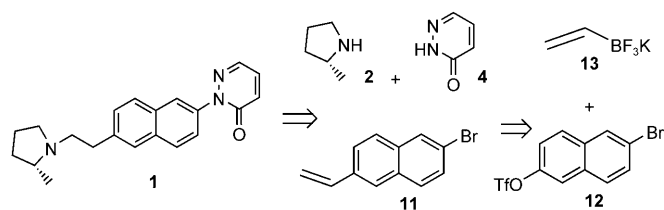
Adv. Synth. Catal. **2009**, 351, 2013–2023



Supriyo Majumder, Kevin R. Gipson, Richard J. Staples, Aaron L. Odom*

- 2024** A Highly Efficient Synthesis of a Naphthalenoid Histamine-3 Antagonist

Adv. Synth. Catal. **2009**, 351, 2024–2030

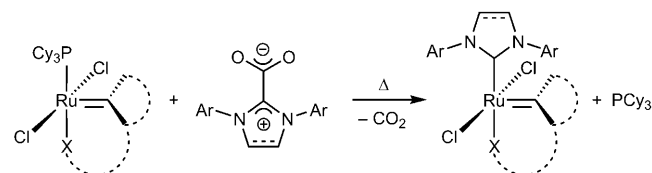


Yi-Yin Ku,* Tim Grieme, Yu-Ming Pu, Ashok V. Bhatia

UPDATE

- 2031** Imidazol(in)ium-2-carboxylates as N-Heterocyclic Carbene Precursors for the Synthesis of Second Generation Ruthenium Metathesis Catalysts

Adv. Synth. Catal. **2009**, 351, 2031–2038



Xavier Sauvage, Albert Demonceau, Lionel Delaude*

Supporting information on the WWW (see article for access details).

*Author to whom correspondence should be addressed.