

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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A Record High
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COMMENTARY

5.619! The Advanced Synthesis & Catalysis 2008 Impact
Factor is the Highest Ever for a Primary Organic Chemistry
Journal

Adv. Synth. Catal. **2009**, 351, 1467–1468

Joe P. Richmond*

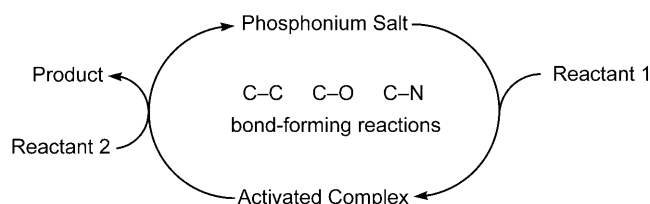
1467

REVIEW

Phosphonium Salt Organocatalysis

Adv. Synth. Catal. **2009**, 351, 1469–1481

Thomas Werner*




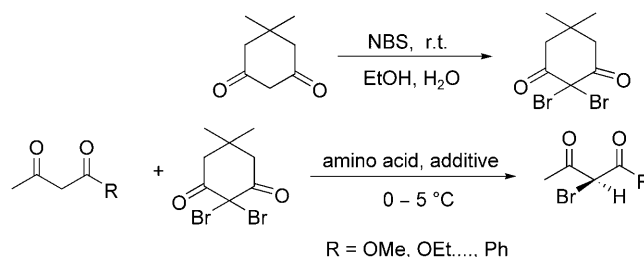
1469

COMMUNICATIONS

- 1483** Design and Application of 2,2-Dibromodimedone as Organic Brominating Reagent for Asymmetric Bromination of 1,3-Dicarbonyl Compounds and Ketones Catalysed by Chiral Amino Acids

Adv. Synth. Catal. **2009**, 351, 1483–1487

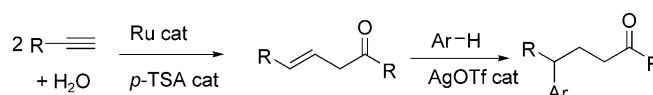
 Papori Goswami,* Abhilasha Baruah, Babulal Das



- 1488** Ruthenium(II)-Catalyzed Regioselective Synthesis of Allyl Ketones from Alkynes and their Silver(I)-Catalyzed Hydroarylation into γ -Functionalized Ketones

Adv. Synth. Catal. **2009**, 351, 1488–1494

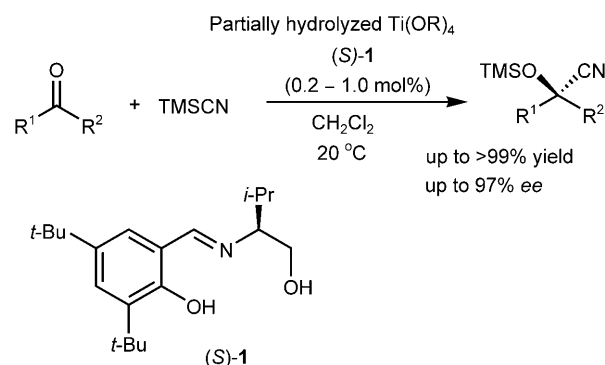
 Min Zhang, Huanfeng Jiang,* Pierre H. Dixneuf*



- 1495** Enantioselective Silylcyanation of Aldehydes and Ketones by a Titanium Catalyst Prepared from a Partially Hydrolyzed Titanium Alkoxide and a Schiff Base Ligand


Adv. Synth. Catal. **2009**, 351, 1495–1498

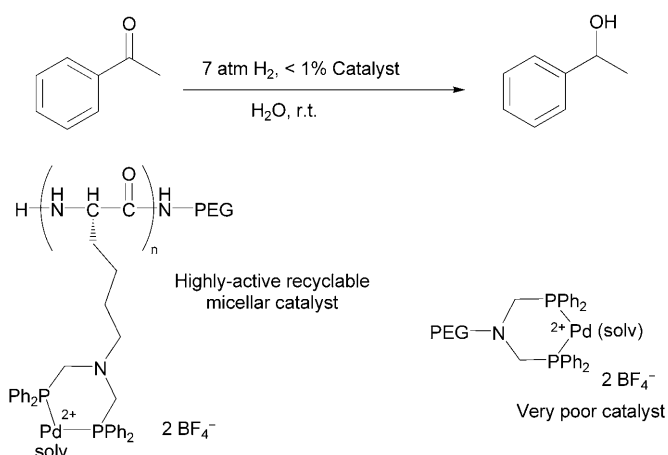
 Kazuhiko Yoshinaga,* Takushi Nagata



- 1499** Amphiphilic Block Polypeptide-Type Ligands for Micellar Catalysis in Water

Adv. Synth. Catal. **2009**, 351, 1499–1504

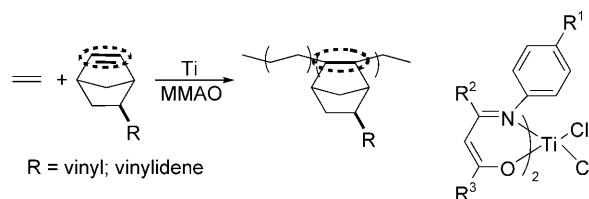
 Shlomi Elias, Arkadi Vigalok*



- 1505** Facile, Efficient Copolymerization of Ethylene with Bicyclic, Non-Conjugated Dienes by Titanium Complexes Bearing Bis(β -Enaminoketonato) Ligands


Adv. Synth. Catal. **2009**, 351, 1505–1511

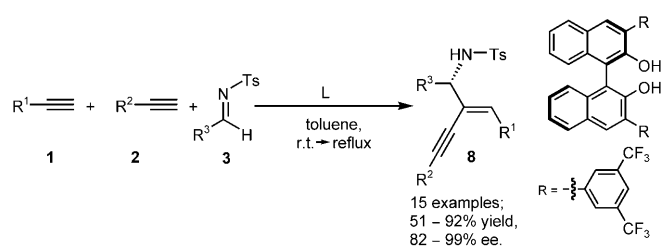
Jing-yu Liu, San-rong Liu, Li Pan, Yue-sheng Li*



Alkylzinc-Mediated Addition of Alkynes to *N*-Tosylaldehydes: Enantioselective Synthesis of (*E*)-(2-En-3-ynyl)-amines

Adv. Synth. Catal. **2009**, 351, 1512–1516


 Chao Yin, Xiu-Qin Hu, Xin-Ping Hui, Peng-Fei Xu*

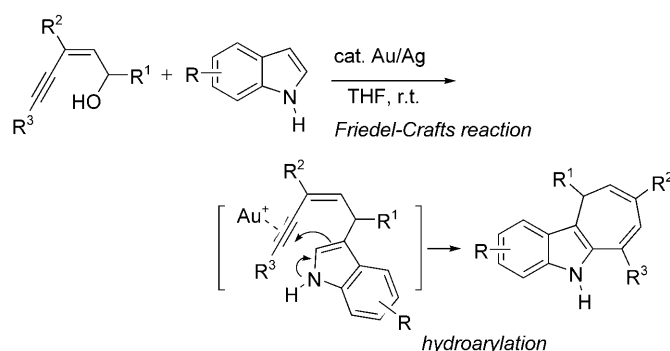


1512

Gold-Catalyzed Intermolecular Reactions of (*Z*)-Enynols with Indoles for the Construction of Dihydrocyclohepta[*b*]indole Skeletons through a Cascade Friedel–Crafts/Hydroarylation Sequence

Adv. Synth. Catal. **2009**, 351, 1517–1522

 Yuhua Lu, Xiangwei Du, Xueshun Jia, Yuanhong Liu*



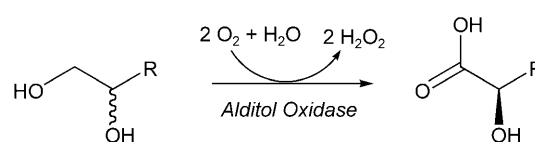
1517

FULL PAPERS

Exploring the Biocatalytic Scope of Alditol Oxidase from *Streptomyces coelicolor*

Adv. Synth. Catal. **2009**, 351, 1523–1530


Erik W. van Hellemond, Linda Vermote, Wilma Koolen, Theo Sonke, Ellen Zandvoort, Dominic P. H. M. Heuts, Dick B. Janssen, Marco W. Fraaije*

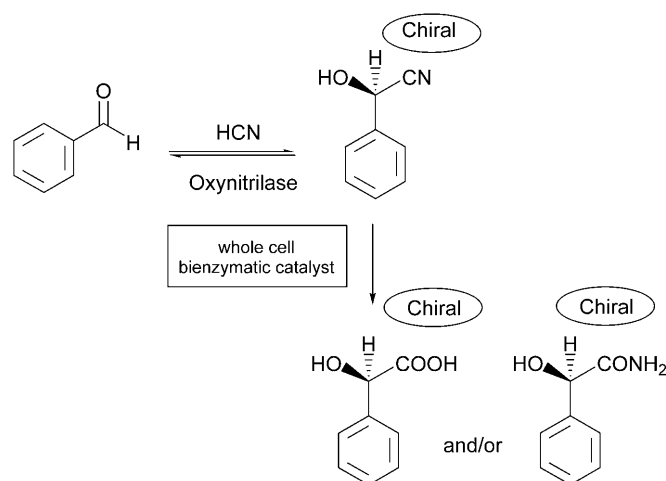


1523

Construction of Recombinant *Escherichia coli* Catalysts which Simultaneously Express an (*S*)-Oxynitrilase and Different Nitrilase Variants for the Synthesis of (*S*)-Mandelic Acid and (*S*)-Mandelic Amide from Benzaldehyde and Cyanide

Adv. Synth. Catal. **2009**, 351, 1531–1538


 Olga Sosodov, Kathrin Matzer, Sibylle Bürger, Christoph Kiziak, Stefanie Baum, Josef Altenbuchner, Andrzej Chmura, Fred van Rantwijk, Andreas Stolz*

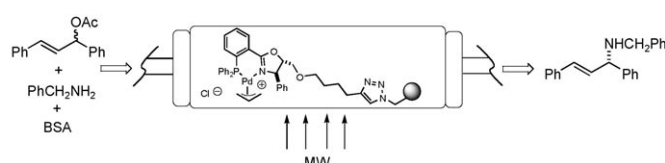


1531

Towards Continuous Flow, Highly Enantioselective Allylic Amination: Ligand Design, Optimization and Supporting

Adv. Synth. Catal. **2009**, 351, 1539–1556

 Dana Popa, Rocío Marcos, Sonia Sayalero, Anton Vidal-Ferran,* Miquel A. Pericàs*

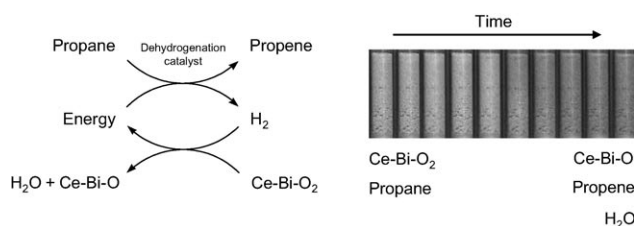


1539

1557 Bismuth-Doped Ceria, $\text{Ce}_{0.90}\text{Bi}_{0.10}\text{O}_2$: A Selective and Stable Catalyst for Clean Hydrogen Combustion

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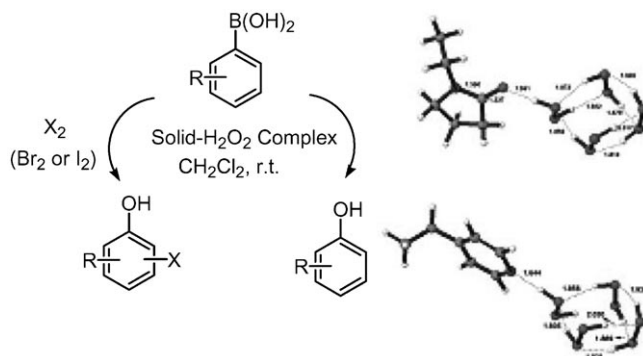
Jurriaan Beckers,* Adam F. Lee, Gadi Rothenberg*



1567 Regioselective Synthesis of Phenols and Halophenols from Arylboronic Acids Using Solid Poly(*N*-vinylpyrrolidone)/Hydrogen Peroxide and Poly(4-vinylpyridine)/Hydrogen Peroxide Complexes

Adv. Synth. Catal. **2009**, 351, 1567–1574

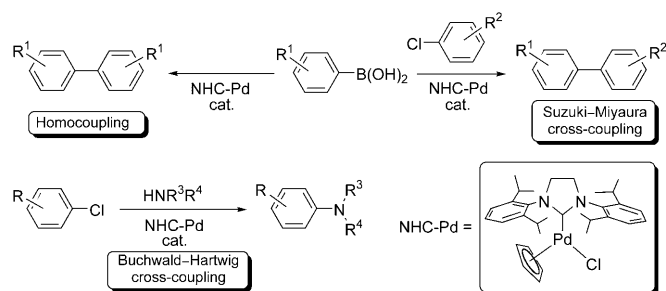
G. K. Surya Prakash,* Sujith Chacko, Chiradeep Panja, Tisa Elizabeth Thomas, Laxman Gurung, Golam Rasul, Thomas Mathew,* George A. Olah*



1575 Highly Active, Well-Defined (Cyclopentadiene)(*N*-heterocyclic carbene)palladium Chloride Complexes for Room-Temperature Suzuki–Miyaura and Buchwald–Hartwig Cross-Coupling Reactions of Aryl Chlorides and Deboronation Homocoupling of Arylboronic Acids

Adv. Synth. Catal. **2009**, 351, 1575–1585

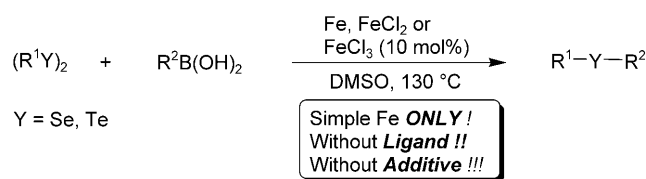
Zhong Jin,* Su-Xian Guo, Xiao-Peng Gu, Ling-Ling Qiu, Hai-Bing Song, Jian-Xin Fang



1586 Iron-Catalyzed Ligand-Free Carbon–Selenium (or Tellurium) Coupling of Arylboronic Acids with Diselenides and Ditellurides

Adv. Synth. Catal. **2009**, 351, 1586–1594

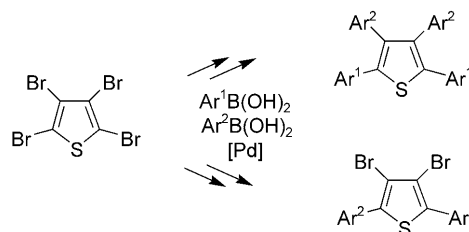
Min Wang, Kai Ren, Lei Wang*



1595 Regioselective Palladium(0)-Catalyzed Cross-Coupling Reactions and Metal-Halide Exchange Reactions of Tetrabromothiophene: Optimization, Scope and Limitations


Adv. Synth. Catal. **2009**, 351, 1595–1609

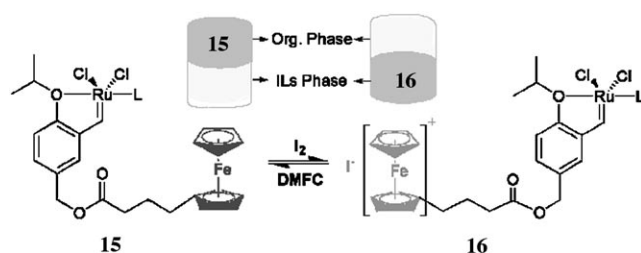
Đặng Thanh Tùng, Đặng Thanh Tuấn, Nasir Rasool, Alexander Villinger, Helmut Reinke, Christine Fischer, Peter Langer*



Ferrocene Redox Controlled Reversible Immobilization of Ruthenium Carbene in Ionic Liquid: A Versatile Catalyst for Ring-Closing Metathesis

Adv. Synth. Catal. **2009**, 351, 1610–1620

 Guiyan Liu, Haiyan He, Jianhui Wang*

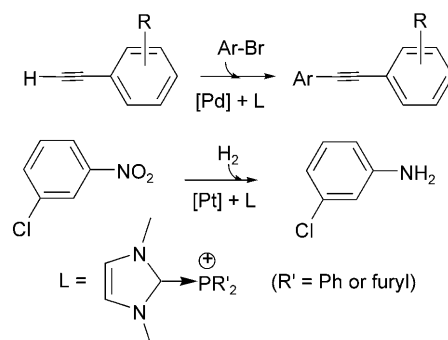


1610

Donor-Stabilized Phosphenium Adducts as New Efficient and Immobilizing Ligands in Palladium-Catalyzed Alkynylation and Platinum-Catalyzed Hydrogenation in Ionic Liquids

Adv. Synth. Catal. **2009**, 351, 1621–1628


Samer Saleh, Elie Fayad, Michèle Azouri, Jean-Cyrille Hierso,* Jacques Andrieu,* Michel Picquet

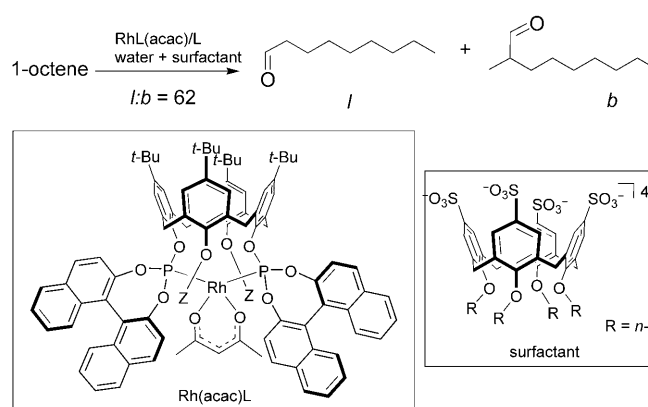


1621

Micellar Effects in Olefin Hydroformylation Catalysed by Neutral, Calix[4]arene-Diphosphite Rhodium Complexes

Adv. Synth. Catal. **2009**, 351, 1629–1636


 Laure Monnereau, David Sémeril,* Dominique Matt,* Loïc Toupet

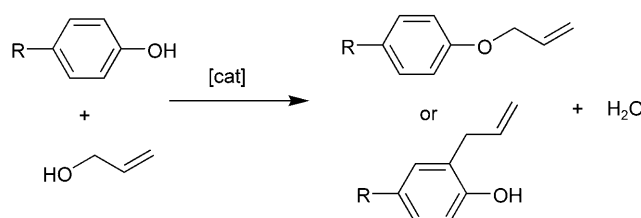


1629

Cationic Ruthenium-Cyclopentadienyl-Diphosphine Complexes as Catalysts for the Allylation of Phenols with Allyl Alcohol; Relation between Structure and Catalytic Performance in *O*- vs. *C*-Allylation

Adv. Synth. Catal. **2009**, 351, 1637–1647


 Jimmy A. van Rijn, Martin Lutz, Lars S. von Chrzanowski, Anthony L. Spek, Elisabeth Bouwman,* Eite Drent

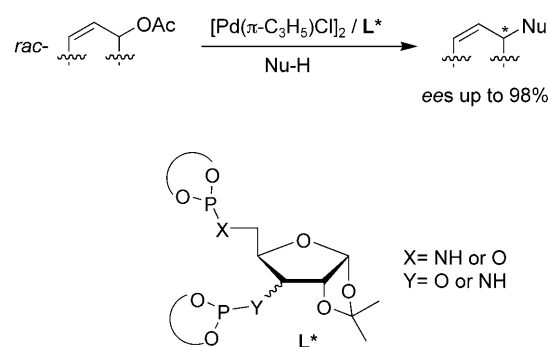


1637

Modular Furanoside Phosphite-Phosphoramidites, a Readily Available Ligand Library for Asymmetric Palladium-Catalyzed Allylic Substitution Reactions. Origin of Enantioselectivity

Adv. Synth. Catal. **2009**, 351, 1648–1670


 Eva Raluy, Oscar Pàmies,* Montserrat Diéguez*

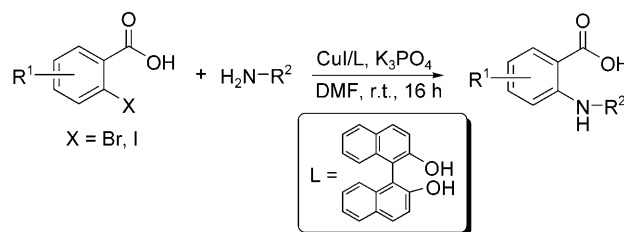


1648

- 1671** Efficient Copper-Catalyzed Synthesis of *N*-Alkylanthranilic Acids via an *ortho*-Substituent Effect of the Carboxyl Group of 2-Halobenzoic Acids at Room Temperature


Adv. Synth. Catal. **2009**, 351, 1671–1676

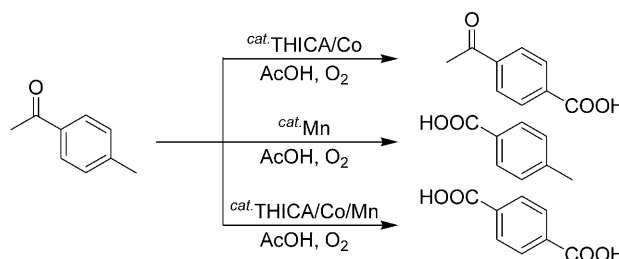
 Liang Zeng, Hua Fu,* Renzhong Qiao,* Yuyang Jiang, Yufen Zhao



- 1677** Selective Oxidation of Acetophenones Bearing Various Functional Groups to Benzoic Acid Derivatives with Molecular Oxygen


Adv. Synth. Catal. **2009**, 351, 1677–1684

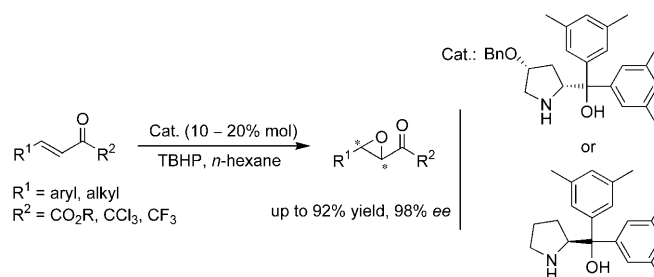
 Ryota Nakamura, Yasushi Obora, Yasutaka Ishii*



- 1685** Highly Efficient Asymmetric Epoxidation of Electron-Deficient α,β -Enones and Related Applications to Organic Synthesis

Adv. Synth. Catal. **2009**, 351, 1685–1691

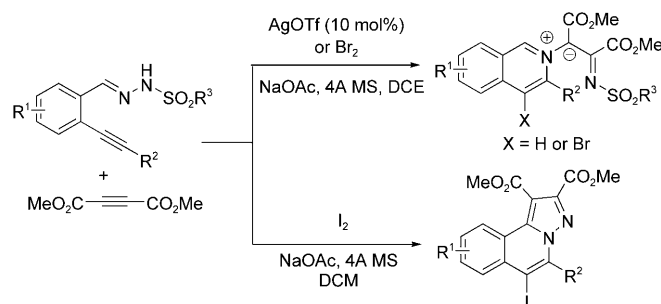
 Changwu Zheng, Yawen Li, Yingquan Yang, Haifeng Wang, Haifeng Cui, Junkang Zhang, Gang Zhao*




- 1692** Silver Triflate-Catalyzed or Electrophile-Mediated Tandem Reaction of *N'*-(2-Alkynylbenzylidene)hydrazides with Dimethyl Acetylenedicarboxylate

Adv. Synth. Catal. **2009**, 351, 1692–1698

 Zhiyuan Chen, Qiuping Ding, Xingxin Yu, Jie Wu*



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