

AIMS AND SCOPE

While total synthesis reached extraordinary levels of sophistication in the last century, the development of practical and efficient synthetic methodologies is still in its infancy. The goal of achieving chemical reactions that are economical, safe, environmentally benign, resource- and energy-saving will demand the highest level of scientific creativity, insight and understanding in a combined effort by academic and industrial chemists.

Advanced Synthesis & Catalysis is designed to stimulate and advance that process by focusing on the development and application of efficient synthetic methodologies and strategies in organic, bioorganic, pharmaceutical, natural product, macromolecular and materials chemistry. The targets of synthetic studies can range from natural products and pharmaceuticals to macromolecules and organic materials. While catalytic methods based on metal complexes or enzymes play an ever increasing role in achieving synthetic efficiency, all areas of interest to the practical synthetic chemist fall within the purview of *Advanced Synthesis & Catalysis*, including synthesis design, reaction techniques, separation science and process development.

Contributions from industrial and governmental laboratories are highly encouraged. It is the goal of the journal to help initiate 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.

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2006, 348, 14, Pages 1781–2000

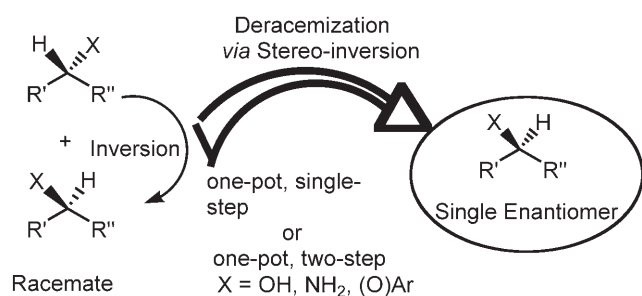
Issue 12 + 13/2006 was published online on August 11, 2006

REVIEW

From a Racemate to a Single Enantiomer: Deracemization by Stereo-inversion

Adv. Synth. Catal. **2006**, 348, 1789–1805

Christian C. Gruber, Iván Lavandera, Kurt Faber, Wolfgang Kroutil*

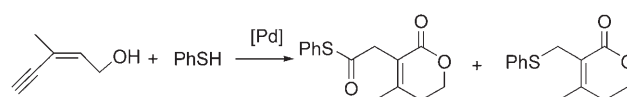


1789

COMMUNICATIONS

Double Carbonylation Reactions of Enynols and Thiols to Form Thioester Substituted 6-Membered Ring Lactones

Adv. Synth. Catal. **2006**, 348, 1807–1812




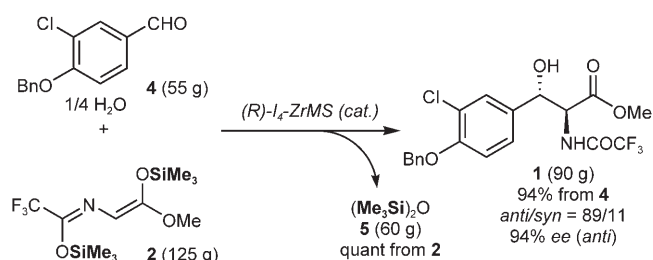
1807

Hong Cao, Wen-Jing Xiao,* Howard Alper*

- 1813** A 100 Gram-Scale Production of a Key Building Block of Antibacterial Vancomycin: The Use of an Air-Stable Chiral Zirconium Catalyst and Complete Recovery of a Silicon Source in Catalytic Asymmetric Mukaiyama Aldol Reaction


Adv. Synth. Catal. **2006**, 348, 1813–1817

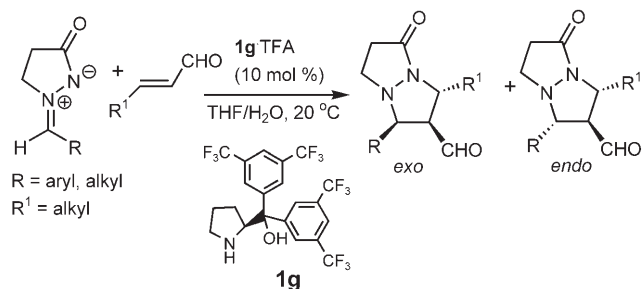
 Takeshi Isoda, Ryo Akiyama, Hidekazu Oyamada, Shū Kobayashi*



- 1818** Organocatalytic and Stereoselective [3 + 2] Cycloadditions of Azomethine Imines with α,β -Unsaturated Aldehydes


Adv. Synth. Catal. **2006**, 348, 1818–1822

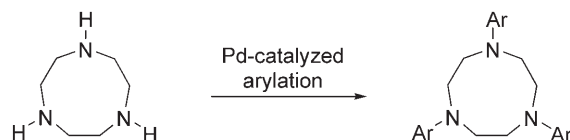
 Wei Chen, Xiang-Hong Yuan, Rui Li, Wei Du, Yong Wu, Li-Sheng Ding, Ying-Chun Chen*



- 1823** Palladium-Catalyzed *N*-Arylations of 1,4,7-Triazacyclononanes


Adv. Synth. Catal. **2006**, 348, 1823–1825

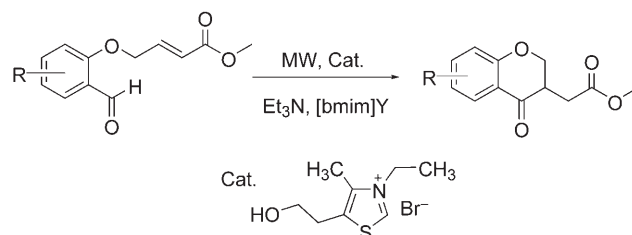
 Masafumi Nakanishi, Carsten Bolm*



- 1826** An Efficient Intramolecular Stetter Reaction in Room Temperature Ionic Liquids Promoted By Microwave Irradiation

Adv. Synth. Catal. **2006**, 348, 1826–1830

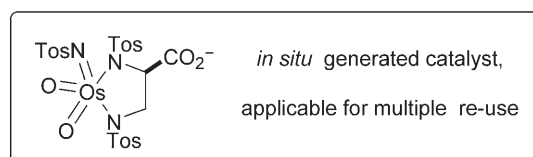
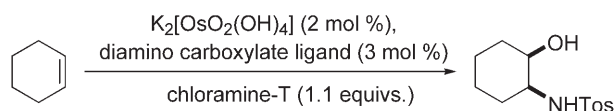
 Zhong-Zhen Zhou, Feng-Qing Ji, Min Cao, Guang-Fu Yang*



- 1831** A Convenient and Highly Productive Aminohydroxylation Protocol Employing an Osmium-Diamine Catalyst

Adv. Synth. Catal. **2006**, 348, 1831–1835

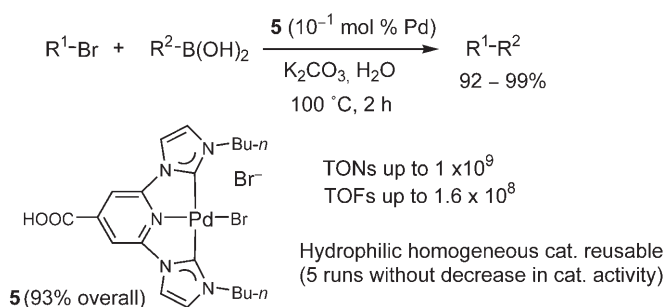
 Kilian Muñoz,* Iriux Almodovar, Jan Streuff, Martin Nieger




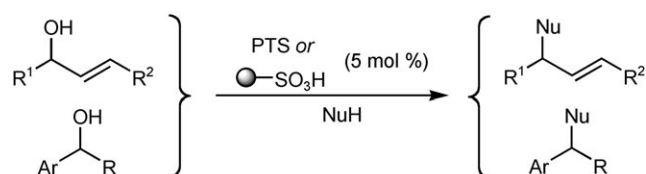
- 1836** Hydrophilic CNC-Pincer Palladium Complexes: A Source for Highly Efficient, Recyclable Homogeneous Catalysts in Suzuki–Miyaura Cross-Coupling

Adv. Synth. Catal. **2006**, 348, 1836–1840

Fátima Churrua, Raul SanMartin,* Blanca Inés, Imanol Tellitu, Esther Domínguez*

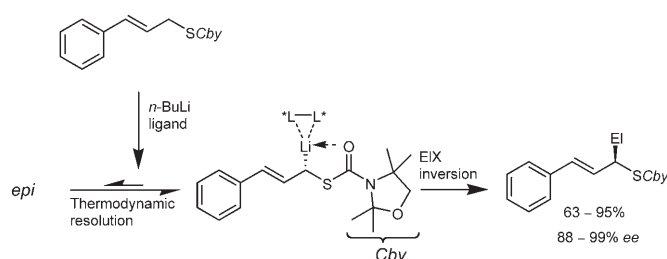


Brønsted Acid-Catalyzed Nucleophilic Substitution of Alcohols

Adv. Synth. Catal. **2006**, 348, 1841–1845
 Roberto Sanz,* Alberto Martínez, Delia Miguel, Julia M. Álvarez-Gutiérrez, Félix Rodríguez


1841

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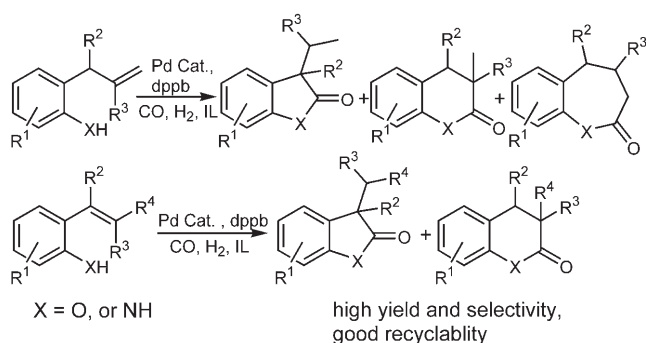
Highly Enantioselective Reactions of a Lithiated α -Thioallyl Carbanion *via* Thermodynamic Resolution Pathway*Adv. Synth. Catal.* **2006**, 348, 1847–1854
 Ravindra P. Sonawane, Roland Fröhlich, Dieter Hoppe*


1847

Recyclable Selective Palladium-Catalyzed Synthesis of Five-, Six- or Seven-Membered Ring Lactones and Lactams by Cyclocarbonylation in Ionic Liquids


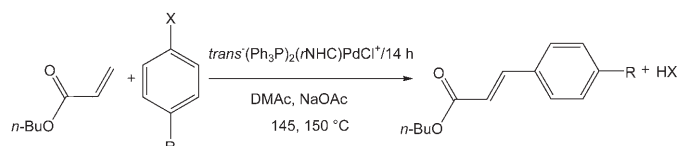
Adv. Synth. Catal. **2006**, 348, 1855–1861

Fanguo Ye, Howard Alper*



1855

Pyridin-, Quinolin- and Acridinylidene Palladium Carbene Complexes as Highly Efficient C–C Coupling Catalysts

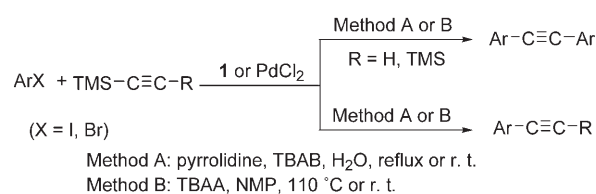
Adv. Synth. Catal. **2006**, 348, 1862–1873
 Sabine K. Schneider, Patric Roembke, Gerrit R. Julius, Helgard G. Raubenheimer,* Wolfgang A. Herrmann*


1862

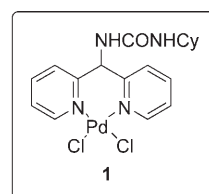
Direct Coupling Reactions of Alkynylsilanes Catalyzed by Palladium(II) Chloride and a Di(2-pyridyl)methylamine-Derived Palladium(II) Chloride Complex in Water and in NMP

Adv. Synth. Catal. **2006**, 348, 1874–1882

Juan Gil-Moltó, Carmen Nájera*




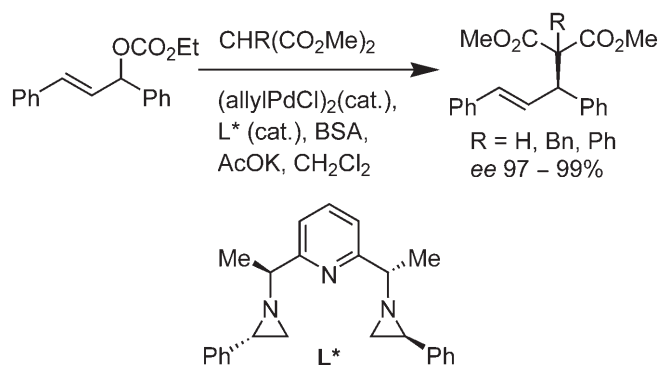
1874



- 1883** Highly Diastereoselective Synthesis of 2,6-Di[1-(2-alkylaziridin-1-yl)alkyl]pyridines, Useful Ligands in Palladium-Catalyzed Asymmetric Allylic Alkylation


Adv. Synth. Catal. **2006**, 348, 1883–1893

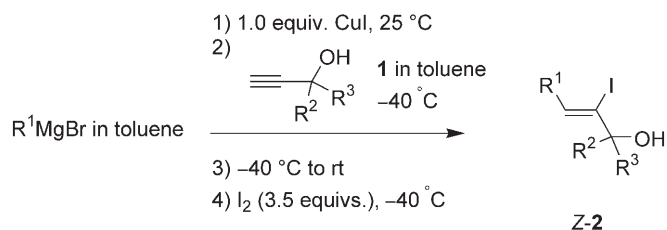
 Diego Savoia,* Giuseppe Alvaro, Romano Di Fabio, Claudio Fiorelli, Andrea Gualandi, Magda Monari, Fabio Piccinelli



- 1894** Copper(I)-Mediated Highly Stereoselective *syn*-Carbometalation of Secondary or Tertiary Propargylic Alcohols with Primary Grignard Reagents in Toluene with a High Linear Regioselectivity


Adv. Synth. Catal. **2006**, 348, 1894–1898

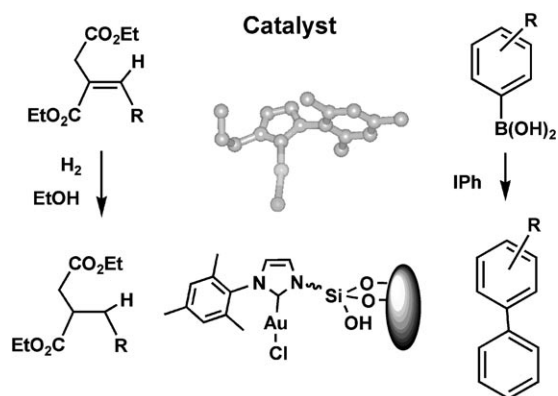
 Shengming Ma,* Zhan Lu



- 1899** New Heterogenized Gold(I)-Heterocyclic Carbene Complexes as Reusable Catalysts in Hydrogenation and Cross-Coupling Reactions

Adv. Synth. Catal. **2006**, 348, 1899–1907

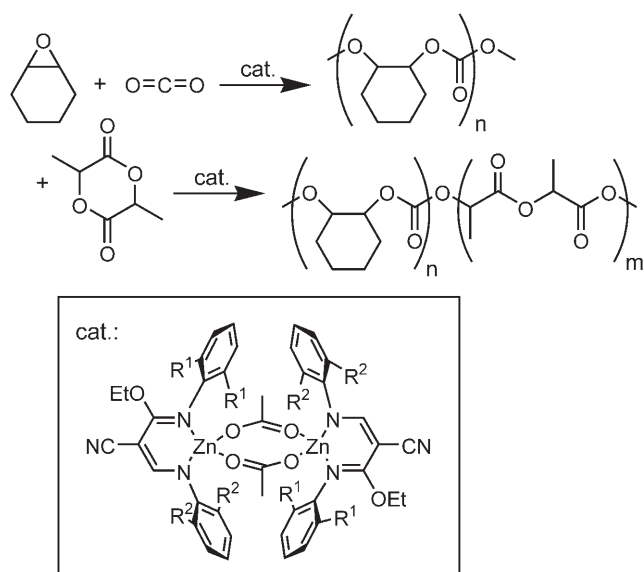
 A. Corma,* E. Gutiérrez-Puebla, M. Iglesias,* A. Monge, S. Pérez-Ferreras, F. Sánchez*



- 1908** Alternating Copolymerization of Carbon Dioxide and Cyclohexene Oxide and Their Terpolymerization with Lactide Catalyzed by Zinc Complexes of N,N Ligands

Adv. Synth. Catal. **2006**, 348, 1908–1918

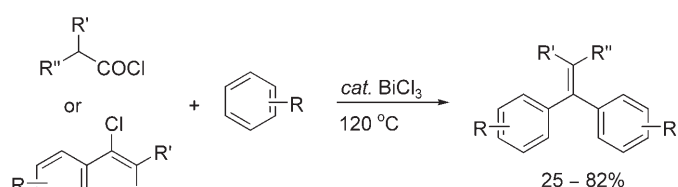
 Mario Kröger,* Cristina Folli, Olaf Walter, Manfred Döring*



An Efficient Bismuth(III) Chloride-Catalyzed Synthesis of 1,1-Diarylalkenes *via* Friedel–Crafts Reaction of Acyl Chloride or Vinyl Chloride with Arenes

Adv. Synth. Catal. **2006**, 348, 1919–1925


 Hongbin Sun, Ruimao Hua,* Songjie Chen, Yingwu Yin

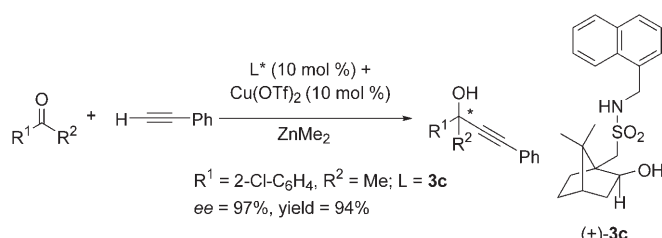


1919

Highly Enantioselective Catalytic Alkynylation of Ketones – A Convenient Approach to Optically Active Propargylic Alcohols

Adv. Synth. Catal. **2006**, 348, 1926–1933

 Gui Lu, Xingshu Li, Yue-Ming Li, Fuk Yee Kwong, Albert S. C. Chan*

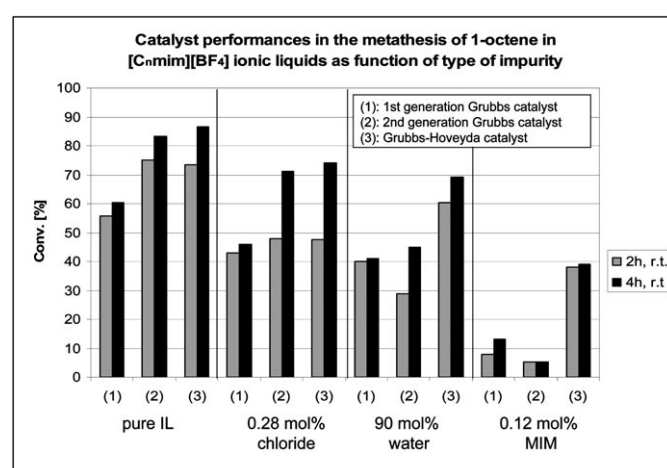


1926

Metathesis of 1-Octene in Ionic Liquids and Other Solvents: Effects of Substrate Solubility, Solvent Polarity and Impurities

Adv. Synth. Catal. **2006**, 348, 1934–1941

 Annegret Stark,* Mariam Ajam, Mike Green, Helgard G. Raubenheimer, Alta Ranwell, Bernd Ondruschka

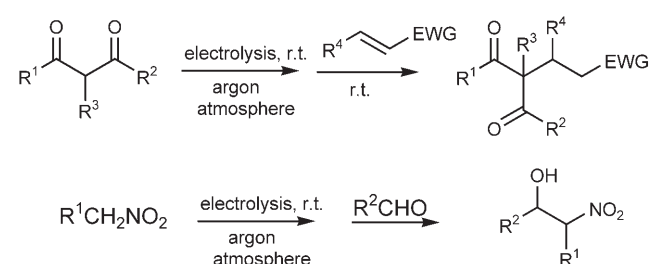


1934

Electrochemically Induced Addition Reactions in the Absence of Solvent and Supporting Electrolyte

Adv. Synth. Catal. **2006**, 348, 1942–1947

Tonino Caruso, Marta Feroci, Achille Inesi, Monica Orsini, Arrigo Scettri, Laura Palombi*

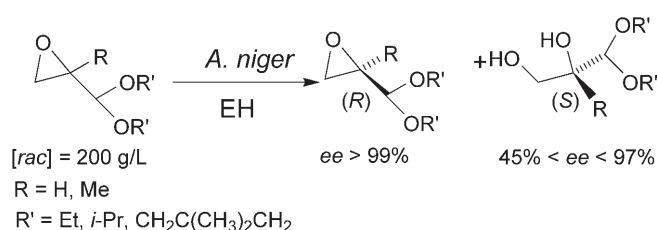


1942

Enzymatic Transformations 62. Preparative Scale Synthesis of Enantiopure Glycidyl Acetals using an *Aspergillus niger* Epoxide Hydrolase-Catalysed Kinetic Resolution

Adv. Synth. Catal. **2006**, 348, 1948–1957

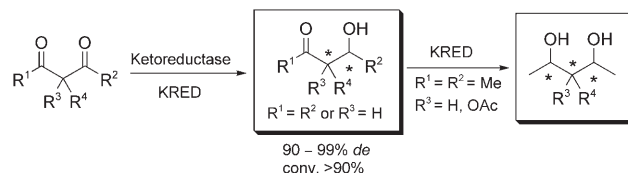
Bastien Doumèche, Alain Archelas, Roland Furstoss*



1948

- 1958** Synthesis of Valuable Chiral Intermediates by Isolated Ketoreductases: Application in the Synthesis of α -Alkyl- β -hydroxy Ketones and 1,3-Diols

Adv. Synth. Catal. **2006**, 348, 1958–1969

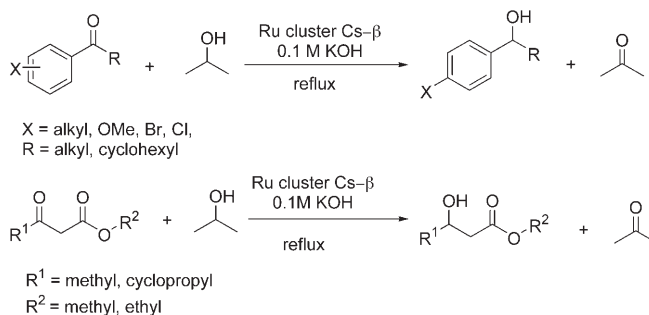


Dimitris Kalaitzakis, J. David Rozzell, Ioulia Smonou,*
Spiros Kambourakis*

- 1970** Selective Transfer Hydrogenation of Carbonyl Compounds by Ruthenium Nanoclusters Supported on Alkali-Exchanged Zeolite Beta

Adv. Synth. Catal. **2006**, 348, 1970–1976

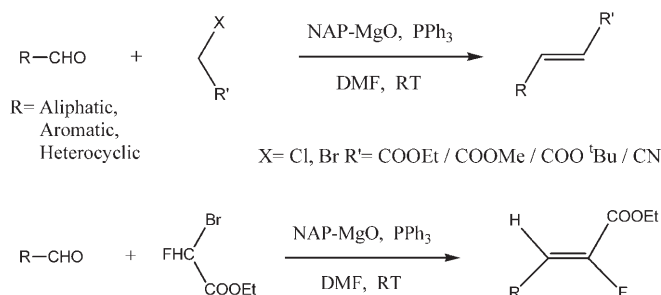
M. Lakshmi Kantam,* B. Purna Chandra Rao,
B. M. Choudary,* and B. Sreedhar



- 1977** The One-Pot Wittig Reaction: A Facile Synthesis of α,β -Unsaturated Esters and Nitriles by Using Nanocrystalline Magnesium Oxide

Adv. Synth. Catal. **2006**, 348, 1977–1985

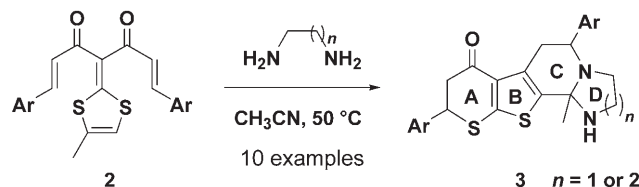
Boyapati M. Choudary,* Koosam Mahendar, M.
Lakshmi Kantam,* Kalluri V. S. Ranganath, Taimur Athar



- 1986** Domino Reaction of Acyclic α,α -Dialkenoylketene *S,S*-Acetals and Diamines: Efficient Synthesis of Tetracyclic Thieno[2,3-*b*]thiopyran-Fused Imidazo[1,2-*a*]pyridine/Pyrido[1,2-*a*]pyrimidines

Adv. Synth. Catal. **2006**, 348, 1986–1990

Fushun Liang,* Jiqing Zhang, Jing Tan, Qun Liu*

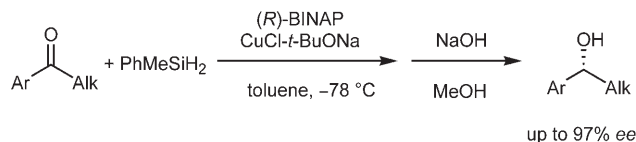


UPDATE

- 1991** Efficient Enantioselective Hydrosilylation of Aryl Ketones Catalyzed by a Chiral BINAP-Copper(I) Catalyst-Phenyl(methyl)silane System

Adv. Synth. Catal. **2006**, 348, 1991–1994

Jean Thomas Issenhuth, Samuel Dagorne,*
Stéphane Bellemin-Lapponnaz*



CORRIGENDUM

In the paper by Marrit F. Eckstein, Marina Peters, Julia Lembrecht, Antje C. Spiess, and Lasse Greiner in Issue 12 + 13, 2006, pp. 1591–1596, equation 5 on page 1593 should be as follows:

$$\eta = \frac{\gamma V}{\gamma V + 1} X \quad (5)$$



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*Author to whom correspondence should be addressed.