

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.

Advanced Synthesis & Catalysis

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2006, 348, 15, Pages 2001–2252

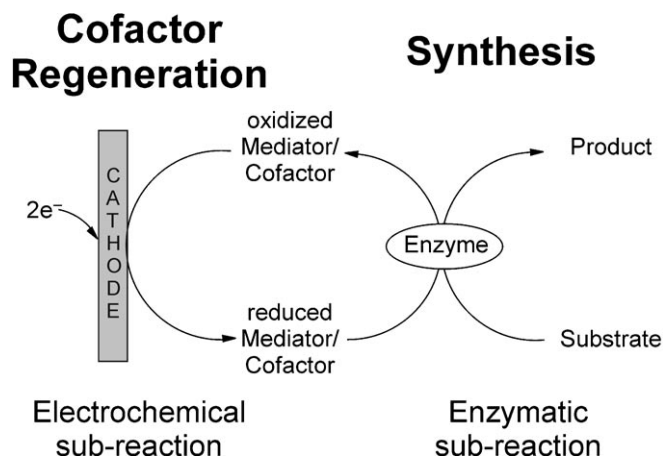
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REVIEW

Productivity of Selective Electroenzymatic Reduction and Oxidation Reactions: Theoretical and Practical Considerations

Adv. Synth. Catal. **2006**, 348, 2015–2026

Reto Ruinatscha, Volker Höllrigl, Katja Otto, Andreas Schmid*

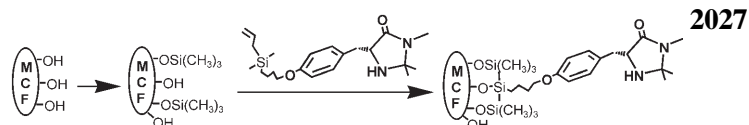


2015

COMMUNICATIONS

Enantioselective Catalysis over Chiral Imidazolidin-4-one Immobilized on Siliceous and Polymer-Coated Mesocellular Foams

Adv. Synth. Catal. **2006**, 348, 2027–2032

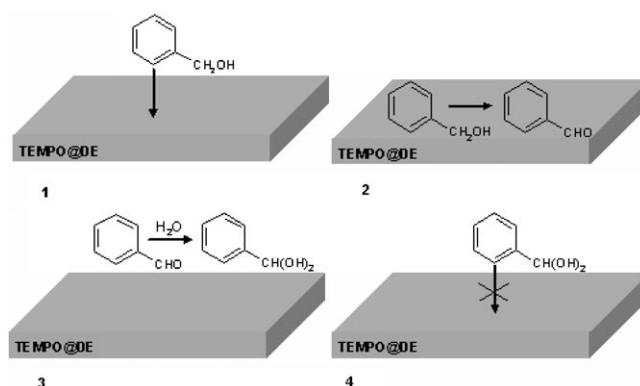


2027

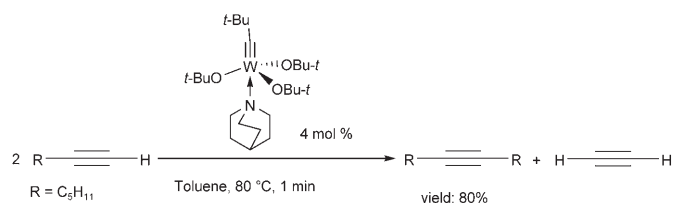
Yugen Zhang, Lan Zhao, Su Seong Lee, Jackie Y. Ying*

2033 Waste-Free Electrochemical Oxidation of Alcohols in Water*Adv. Synth. Catal.* **2006**, 348, 2033–2037

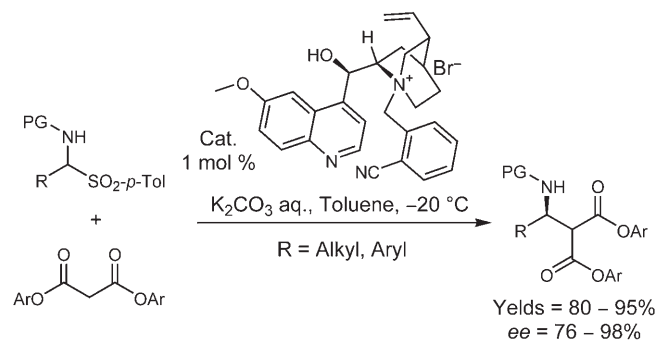
Giovanni Palmisano, Rosaria Ciriminna, Mario Pagliaro*

**2038** Terminal Alkyne Metathesis: A Further Step Towards Selectivity*Adv. Synth. Catal.* **2006**, 348, 2038–2042

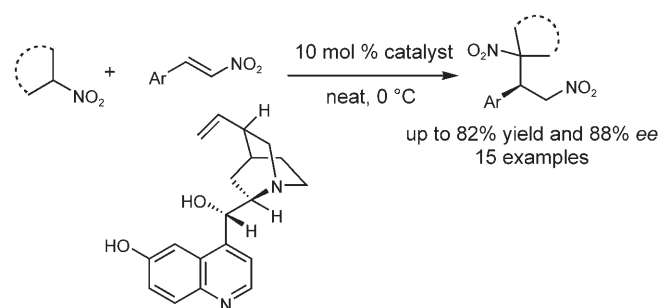
Olivier Coutelier, André Mortreux*

**2043** Phase-Transfer-Catalyzed Enantioselective Mannich Reaction of Malonates with α -Amido Sulfones*Adv. Synth. Catal.* **2006**, 348, 2043–2046

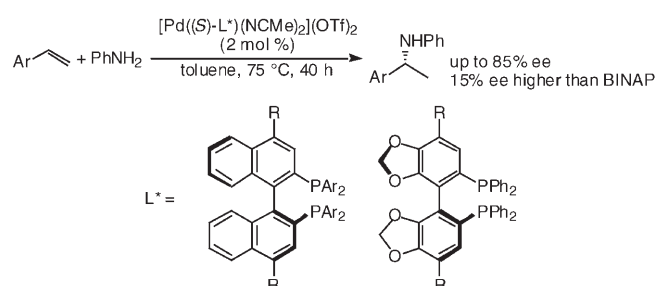
Francesco Fini, Luca Bernardi, Raquel P. Herrera, Daniel Pettersen, Alfredo Ricci,* Valentina Sgarzani

**2047** Organocatalytic, Enantioselective Conjugate Addition of Nitroalkanes to Nitroolefins*Adv. Synth. Catal.* **2006**, 348, 2047–2050

Jian Wang, Hao Li, Liansuo Zu, Wei Jiang, Wei Wang*

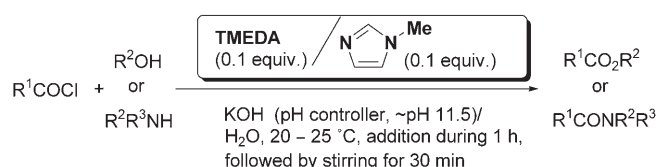
**2051** Palladium-Catalyzed Intermolecular Asymmetric Hydroamination with 4,4'-Disubstituted BINAP and SEGPHOS*Adv. Synth. Catal.* **2006**, 348, 2051–2056

Aiguo Hu, Masamichi Ogasawara,* Takeshi Sakamoto, Atsushi Okada, Kiyohiko Nakajima, Tamotsu Takahashi,* Wenbin Lin*



Water Solvent Method for Esterification and Amide Formation between Acid Chlorides and Alcohols Promoted by Combined Catalytic Amines: Synergy between *N*-Methylimidazole and *N,N,N',N'*-Tetramethylethylenediamine (TMEDA)

Adv. Synth. Catal. **2006**, 348, 2057–2062

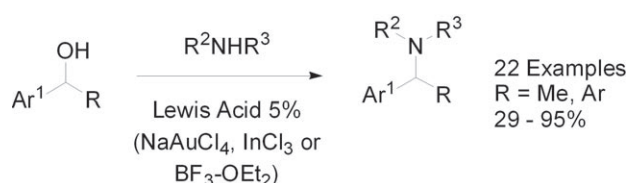


2057

Hidefumi Nakatsuji, Jun-ichi Morita, Tomonori Misaki, Yoo Tanabe*

Lewis Acid-Catalyzed Direct Amination of Benzhydryl Alcohols

Adv. Synth. Catal. **2006**, 348, 2063–2067

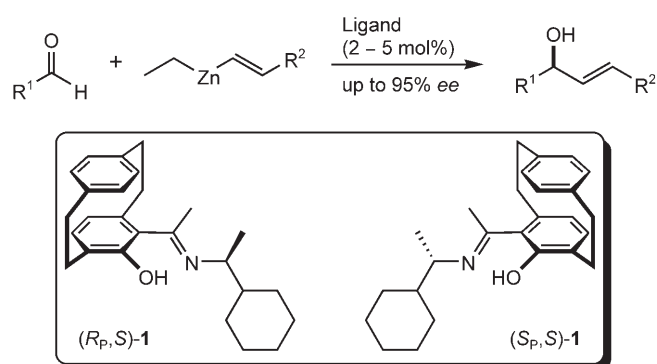


2063

Vincent Terrasson, Sylvain Marque, Marie Georgy, Jean-Marc Campagne,* Damien Prim*

Second-Generation *N,O*-[2.2]Paracyclophane Ketimine Ligands for the Alkenylzinc Addition to Aliphatic and Aromatic Aldehydes: Scope and Limitations

Adv. Synth. Catal. **2006**, 348, 2068–2074

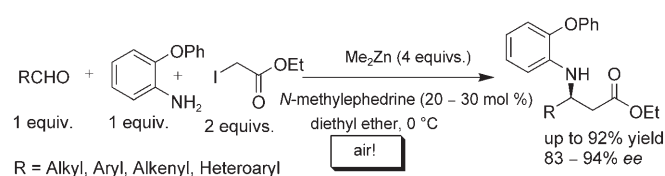


2068

Frank Lauterwasser, Julia Gall, Sebastian Höfener, Stefan Bräse*

A Catalytic Enantioselective Imino-Reformatsky Reaction

Adv. Synth. Catal. **2006**, 348, 2075–2079

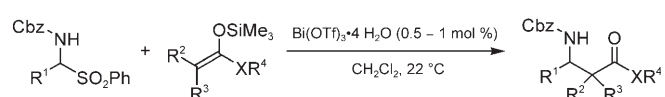


2075

Pier Giorgio Cozzi*

The First Catalytic Mannich-Type Reaction of *N*-Alkoxycarbonylamino Sulfones with Silyl Enolates

Adv. Synth. Catal. **2006**, 348, 2080–2084

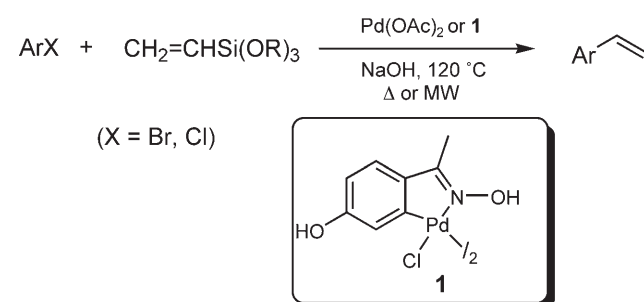


2080

Thierry Ollevier,* Etienne Nadeau, Jean-Christophe Eguillon

The First Fluoride-Free Hiyama Reaction of Vinylsiloxanes Promoted by Sodium Hydroxide in Water

Adv. Synth. Catal. **2006**, 348, 2085–2091



2085

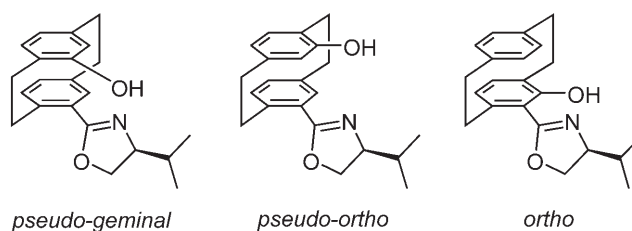
Emilio Alacid, Carmen Nájera*

FULL PAPERS

- 2093** The Synthesis of *Pseudo-Geminal*, *Pseudo-Ortho* and *Ortho* Hydroxy-oxazolinyl[2.2]paracyclophanes for Use as Ligands in Asymmetric Catalysis

Adv. Synth. Catal. **2006**, 348, 2093–2100

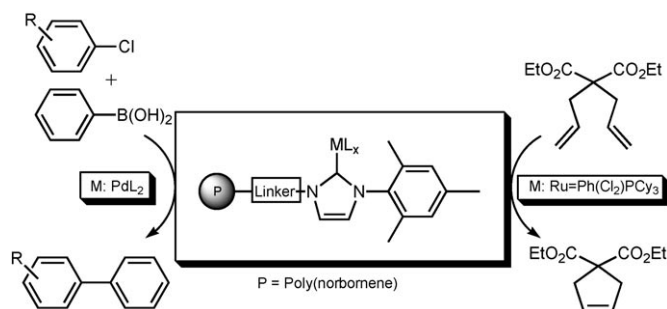
 Carsten Bolm,* Daniel K. Whelligan



- 2101** Poly(norbornene)-Supported N-Heterocyclic Carbenes as Ligands in Catalysis

Adv. Synth. Catal. **2006**, 348, 2101–2113

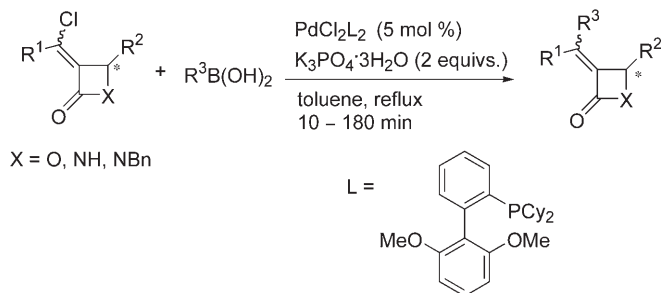
William J. Sommer, Marcus Weck*



- 2114** Highly Efficient Suzuki Coupling Reaction of α -Chloroalkylidene- β -lactones and β -Lactams with Organoboronic Acids

Adv. Synth. Catal. **2006**, 348, 2114–2124

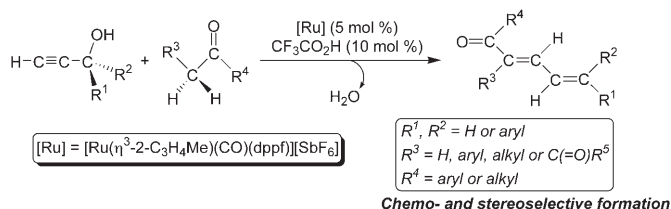
 Shengming Ma,* Xuefeng Jiang, Xin Cheng, Hairong Hou



- 2125** Efficient Access to Conjugated Dienones and Diene-diones from Propargylic Alcohols and Enolizable Ketones: A Tandem Isomerization/Condensation Process Catalyzed by the Sixteen-Electron Allyl-Ruthenium(II) Complex $[\text{Ru}(\eta^3\text{-}2\text{-C}_3\text{H}_4\text{Me})(\text{CO})(\text{dppf})][\text{SbF}_6]$

Adv. Synth. Catal. **2006**, 348, 2125–2132

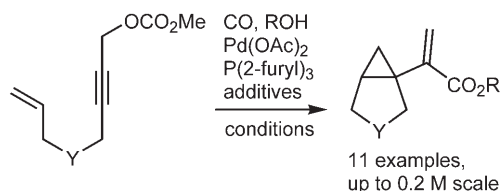
 Victorio Cadierno,* Josefina Díez, Sergio E. García-Garrido, José Gimeno,* Noel Nebra



- 2133** Cyclopropyl Building Blocks for Organic Synthesis, 131. Palladium-Catalyzed Bicyclization with Carbonyl Insertion of Alkenyl-Tethered Propargyl Carbonates Towards a Scalable Synthesis of Various 2-(Bicyclo[3.1.0]hex-1-yl)acrylates

Adv. Synth. Catal. **2006**, 348, 2133–2147

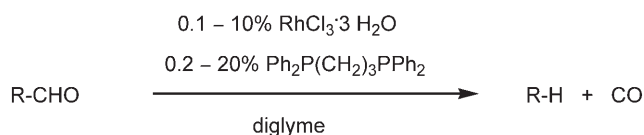
 Viktor Bagutski, Norbert Moszner, Frank Zeuner, Urs Karl Fischer, Armin de Meijere*



A General and Convenient Method for the Rhodium-Catalyzed Decarbonylation of Aldehydes

Adv. Synth. Catal. **2006**, 348, 2148–2154

 Michael Kreis, Anders Palmelund, Lennart Bunch, Robert Madsen*

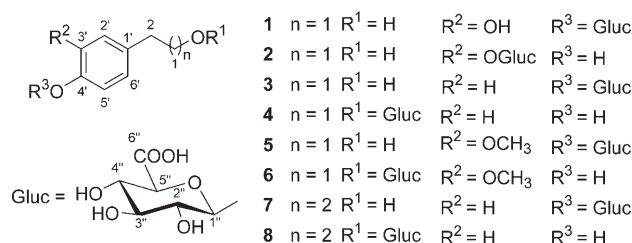


2148

Biocatalyzed Synthesis and Structural Characterization of Monoglucuronides of Hydroxytyrosol, Tyrosol, Homovanillic Alcohol, and 3-(4'-Hydroxyphenyl)propanol

Adv. Synth. Catal. **2006**, 348, 2155–2162

 Olha Khymenets, Jesús Joglar,* Pere Clapés, Teodor Parella, María-Isabel Covas, Rafael de la Torre

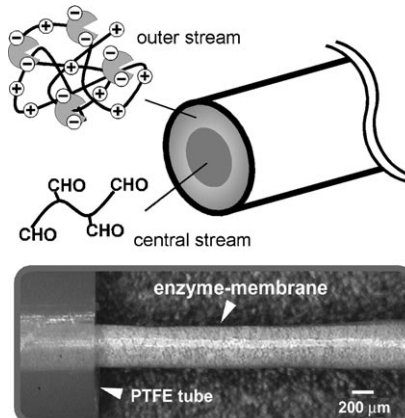


2155

Facile Preparation of an Enzyme-Immobilized Microreactor using a Cross-Linking Enzyme Membrane on a Microchannel Surface

Adv. Synth. Catal. **2006**, 348, 2163–2171

 Takeshi Honda, Masaya Miyazaki,* Hiroyuki Nakamura, Hideaki Maeda*

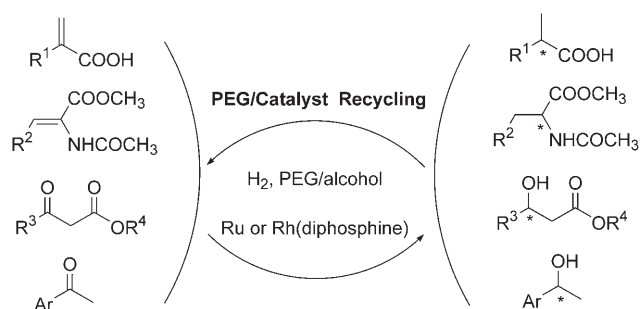


2163

Polyethylene Glycol as an Environmentally Friendly and Recyclable Reaction Medium for Enantioselective Hydrogenation

Adv. Synth. Catal. **2006**, 348, 2172–2182

Hai-Feng Zhou, Qing-Hua Fan,* Wei-Jun Tang, Li-Jin Xu, Yan-Mei He, Guo-Jun Deng, Li-Wen Zhao, Lian-Quan Gu,* Albert S. C. Chan*

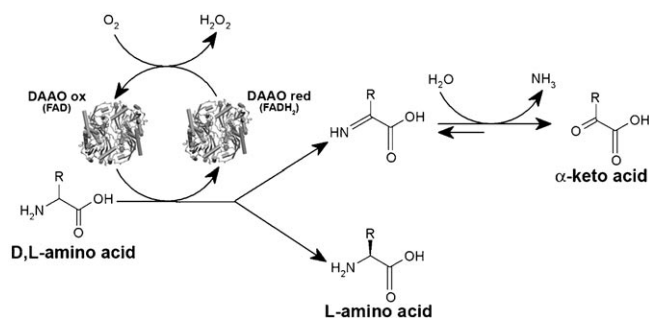


2172

Enzymatic Conversion of Unnatural Amino Acids by Yeast D-Amino Acid Oxidase

Adv. Synth. Catal. **2006**, 348, 2183–2190

Antonio Caligiuri, Paola D'Arrigo, Elena Rosini, Davide Tessaro, Gianluca Molla, Stefano Servi, Loredano Pollegioni*

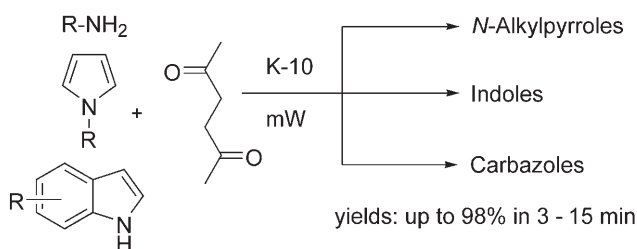


2183

- 2191** Solvent-Free Solid Acid-Catalyzed Electrophilic Annulations: A New Green Approach for the Synthesis of Substituted Five-Membered N-Heterocycles

Adv. Synth. Catal. **2006**, 348, 2191–2196

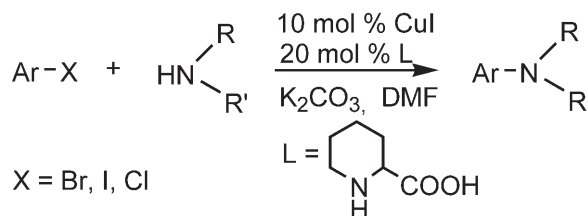
 Mohammed Abid, Andrew Spaeth, Béla Török*



- 2197** An Inexpensive and Efficient Copper Catalyst for *N*-Arylation of Amines, Amides and Nitrogen-Containing Heterocycles

Adv. Synth. Catal. **2006**, 348, 2197–2202

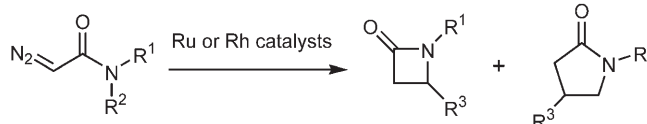
 Xun Guo, Honghua Rao, Hua Fu,* Yuyang Jiang, Yufen Zhao



- 2203** Diruthenium(II) Catalysts for the Formation of β - and γ -Lactams via Carbenoid C–H Insertion of α -Diazoacetamides

Adv. Synth. Catal. **2006**, 348, 2203–2211

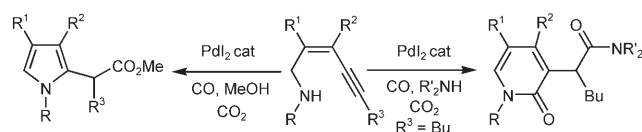
Markus Grohmann, Stefan Buck, Lutz Schäffler, Gerhard Maas*



- 2212** Versatile Synthesis of Pyrrole-2-acetic Esters and (Pyridine-2-one)-3-acetic Amides by Palladium-Catalyzed, Carbon Dioxide-Promoted Oxidative Carbonylation of (*Z*)-(2-En-4-ynyl)amines

Adv. Synth. Catal. **2006**, 348, 2212–2222

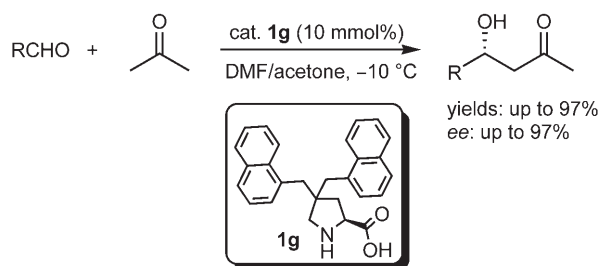
 Bartolo Gabriele,* Giuseppe Salerno, Alessia Fazio, Lucia Veltri



- 2223** 4,4'-Disubstituted L-Prolines as Highly Enantioselective Catalysts for Direct Aldol Reactions

Adv. Synth. Catal. **2006**, 348, 2223–2228

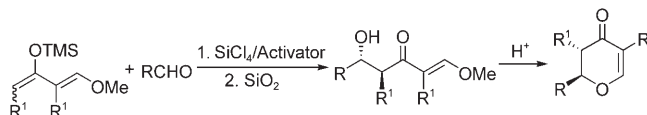
 Liuqun Gu, Menglong Yu, Xiaoyu Wu, Yazhu Zhang, Gang Zhao*



- 2229** Diastereo- and Enantioselective Synthesis of *trans*-2,3-Disubstituted 2,3-Dihydropyran-4-one Derivatives

Adv. Synth. Catal. **2006**, 348, 2229–2236

Arrigo Scettri,* Maria R. Acocella, Laura Palombi, Chiara Scalera, Rosaria Villano, Antonio Massa

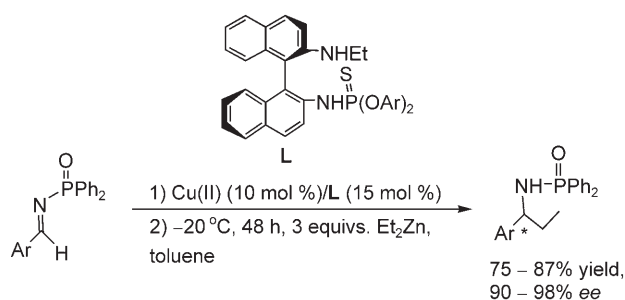


UPDATES

Asymmetric Addition of Diethylzinc to
Diphenylphosphinoyl-Imines Catalyzed by Copper(II)
Trifluoromethanesulfonate-Chiral (2'-Ethylamino-
[1,1']binaphthalenyl-2-yl)-thiophosphoramidic Acid *O,O'*-
Diaryl Ester Ligands

Adv. Synth. Catal. **2006**, 348, 2237–2242

 Min Shi,* Zhi-Yu Lei, Qin Xu

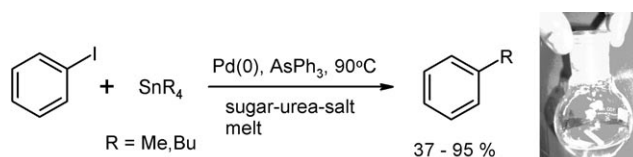


2237

Stille Reactions with Tetraalkylstannanes and
Phenyltrialkylstannanes in Low Melting Sugar-Urea-Salt
Mixtures

Adv. Synth. Catal. **2006**, 348, 2243–2247

 Giovanni Imperato, Rudolf Vasold, Burkhard König*



2243

CORRIGENDUM

In the paper by Jennifer Zeitouni, Stéphanie Norsikian, Denis Merlet, and André Lubineau in Issue 12 + 13, 2006, pp. 1662–1670, Schemes 1, 4, and 5 show incorrect stereochemistry: For C-1 in **3a**, and for C-1' for **11a**, **11b**, **12a**, **12b**, **12c** the (*S*) configuration is shown, which should be (*R*); for C-1 in **3b**, the (*R*) configuration is shown, which should be (*S*). The configurations given in the text are correct.

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

*Author to whom correspondence should be addressed.