

## 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, multiphase 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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**2008, 350, 2, Pages 209–352**

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## COVER PICTURE

The cover picture, provided by Shū Kobayashi, shows an example of chiral Lewis acid catalysis based on Lewis acid–surfactant combined catalysts (LASCs). Chiral hydrophobic environments made up of scandium(III) dodecyl sulfate and a chiral bipyridine ligand catalyze the asymmetric aldol-type reactions of silyl enol ethers in water as the sole solvent.

## REVIEW

Heterogeneous Catalysis for Fine Chemicals in Dense Phase  
Carbon Dioxide

*Adv. Synth. Catal.* **2008**, 350, 221–226

Rosaria Ciriminna, Massimo L. Carraro, Sandro Campestrini,  
Mario Pagliaro\*



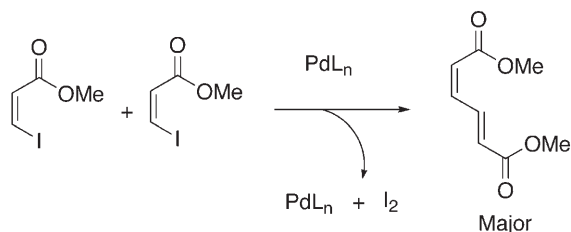
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## COMMUNICATIONS

- 227** A Stereoselective Palladium-Mediated Reductive Coupling of Electron-Deficient Terminal Iodoalkenes


*Adv. Synth. Catal.* **2008**, 350, 227–233

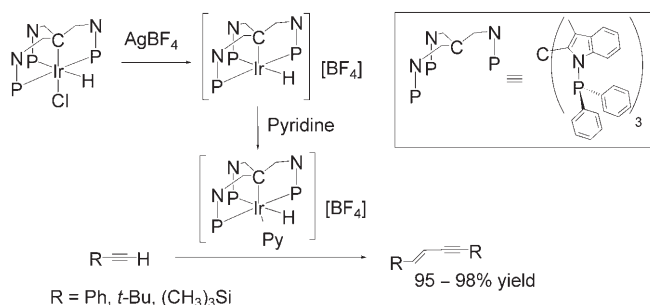
 Andrei S. Batsanov, Jonathan P. Knowles, Benedict Samsam, Andrew Whiting\*



- 234** An Unprecedented Iridium(III) Catalyst for Stereoselective Dimerisation of Terminal Alkynes


*Adv. Synth. Catal.* **2008**, 350, 234–236

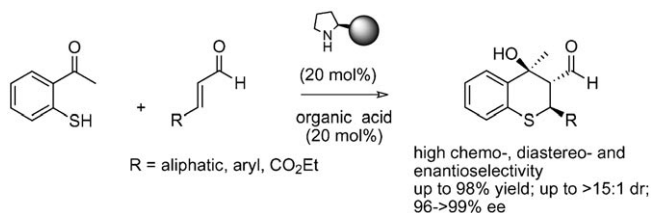
 Marco Ciclosi, Francisco Estevan, Pascual Lahuerta,\* Vincenzo Passarelli,\* Julia Pérez-Prieto,\* Mercedes Sanaú



- 237** Highly Diastereo- and Enantioselective Catalytic Domino Thia-Michael/Aldol Reactions: Synthesis of Benzothiopyrans with Three Contiguous Stereocenters


*Adv. Synth. Catal.* **2008**, 350, 237–242

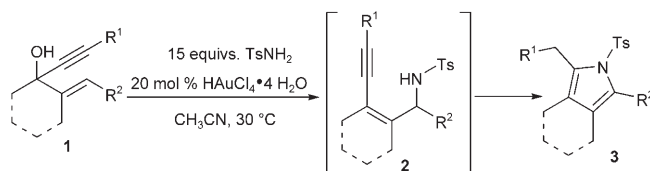
 Gui-Ling Zhao, Jan Vesely, Ramon Rios, Ismail Ibrahim, Henrik Sundén, Armando Córdova\*



- 243** Tandem Gold(III)-Catalyzed Amination-Intramolecular Hydroamination Reactions of 1-En-4-yn-3-ols with Sulfonamides: Efficient Approach to Highly Substituted Pyrroles

*Adv. Synth. Catal.* **2008**, 350, 243–248

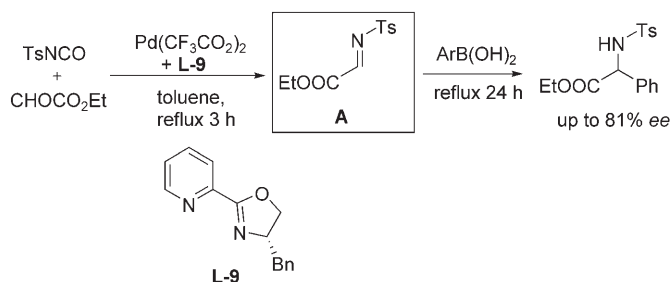
 Xing-Zhong Shu, Xue-Yuan Liu, Hui-Quan Xiao, Ke-Gong Ji, Li-Na Guo, Yong-Min Liang\*



- 249** Palladium(II)-Catalyzed One-Pot Enantioselective Synthesis of Arylglycine Derivatives from Ethyl Glyoxylate, *p*-Toluenesulfonyl Isocyanate and Arylboronic Acids

*Adv. Synth. Catal.* **2008**, 350, 249–253

 Huixiong Dai, Miao Yang, Xiyan Lu\*

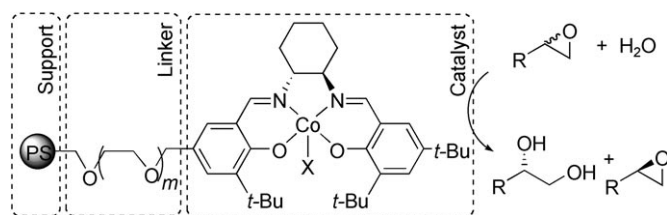


## FULL PAPERS

## Engineering Polymer-Enhanced Bimetallic Cooperative Interactions in the Hydrolytic Kinetic Resolution of Epoxides

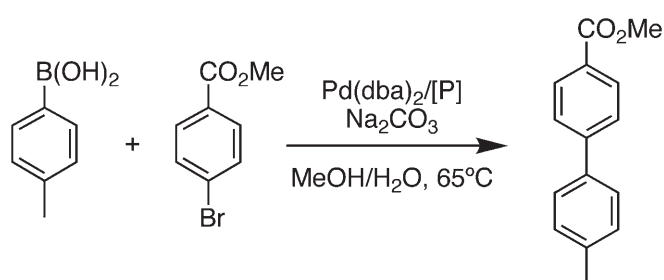
*Adv. Synth. Catal.* **2008**, 350, 255–261

Xiaolai Zheng, Christopher W. Jones, Marcus Weck\*

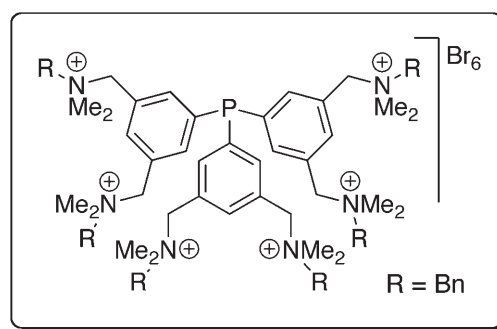


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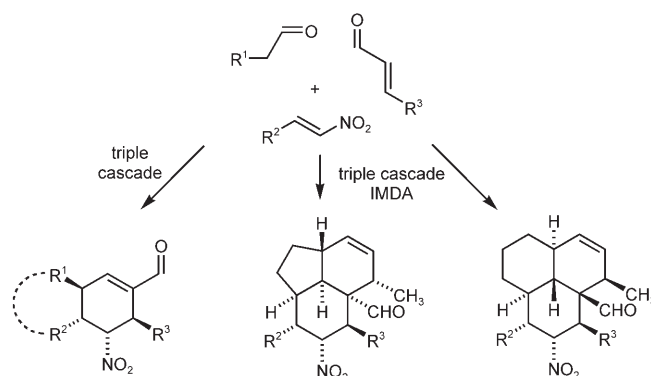
## Fast Suzuki–Miyaura Cross-Coupling Reaction with Hexacationic Triarylphosphine Bn-Dendriphos as Ligand

*Adv. Synth. Catal.* **2008**, 350, 262–266Dennis J. M. Snelders, Robert Kreiter, Judith J. Firet  
Gerard van Koten, Robertus J. M. Klein Gebbink\*

Bn-Dendriphos

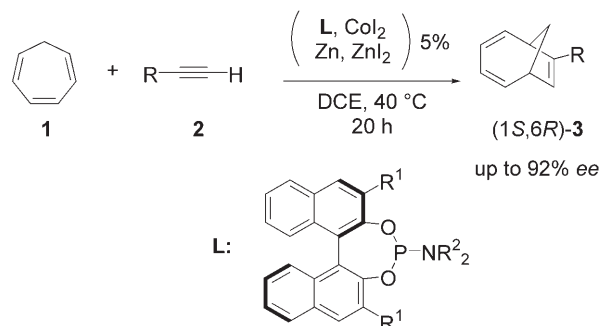


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Asymmetric Synthesis of Polyfunctionalized Mono-, Bi-, and Tricyclic Carbon Frameworks *via* Organocatalytic Domino Reactions*Adv. Synth. Catal.* **2008**, 350, 267–279Dieter Enders,\* Matthias R. M. Hüttel, Gerhard Raabe,  
Jan W. Bats

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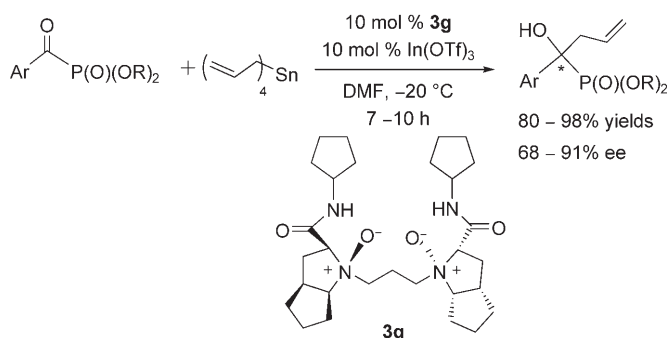
## Enantioselective Cobalt-Catalyzed [6+2] Cycloadditions of Cycloheptatriene with Alkynes

*Adv. Synth. Catal.* **2008**, 350, 280–286Nicolas Toselli, David Martin, Mathieu Achard,  
Alphonse Tenaglia, Thomas Bürgi, Gerard Buono\*

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- ## 287 Highly Enantioselective Allylation of Aromatic $\alpha$ -Keto Phosphonates Catalyzed by Chiral $N,N'$ -Dioxide-Indium(III) Complexes

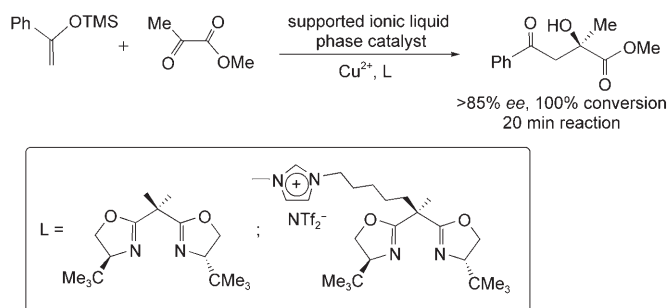
*Adv. Synth. Catal.* **2008**, 350, 287–294



- 295** Efficient Heterogeneous Asymmetric Catalysis of the Mukaiyama Aldol Reaction by Silica- and Ionic Liquid-Supported Lewis Acid Copper(II) Complexes of Bis(oxazolines)

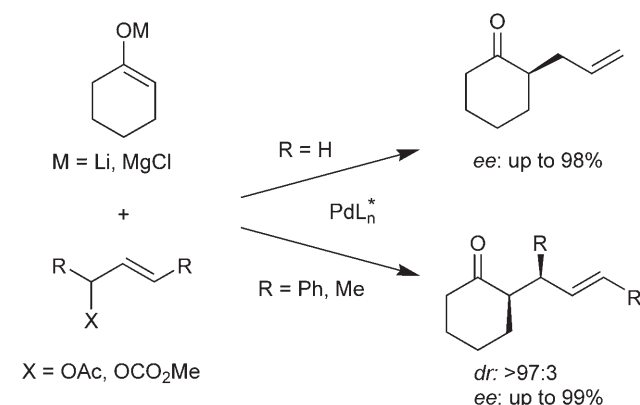
*Adv. Synth. Catal.* **2008**, 350, 295–302

S. Doherty,\* P. Goodrich, C. Hardacre,\* V. Pârvulescu,  
C. Paun



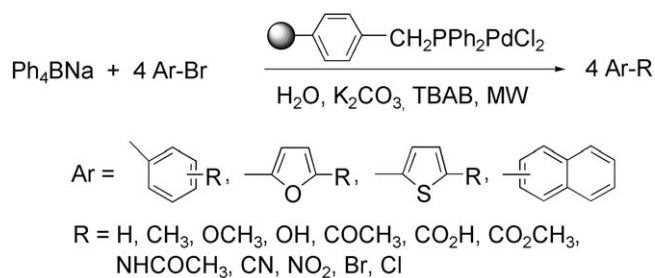
- ### 303 Palladium-Catalyzed Diastereoselective and Enantioselective Allylic Alkylations of Ketone Enolates

*Adv. Synth. Catal.* **2008**, 350, 303–314



- 315** Reusable, Polymer-Supported, Palladium-Catalyzed, Atom-Efficient Coupling Reaction of Aryl Halides with Sodium Tetraphenylborate in Water by Focused Microwave Irradiation

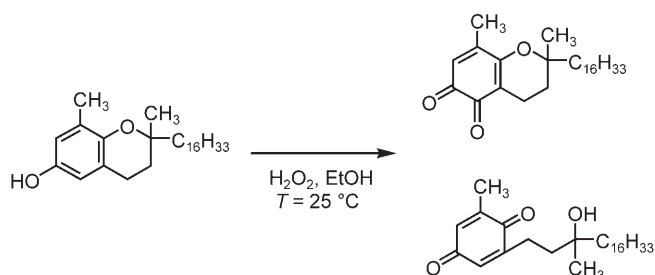
*Adv. Synth. Catal.* **2008**, 350, 315–320



- ## 321 A Novel and Efficient Synthesis of Tocopheryl Quinones by Homogeneous and Heterogeneous Methyltrioxorhenium/Hydrogen Peroxide Catalytic Systems

*Adv. Synth. Catal.* **2008**, 350, 321–331

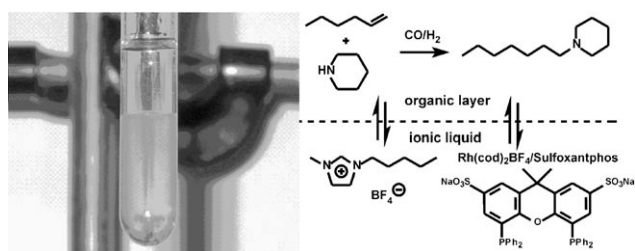
Raffaele Saladino,\* Veronica Neri, Angela Farina,  
Claudia Crestini, Lucia Nencioni, Anna Teresa Palamara



# Hydroaminomethylation of *n*-Alkenes in a Biphasic Ionic Liquid System

*Adv. Synth. Catal.* **2008**, 350, 332–342

Bart Hamers, Patrick S. Bäuerlein, Christian Müller, Dieter Vogt\*



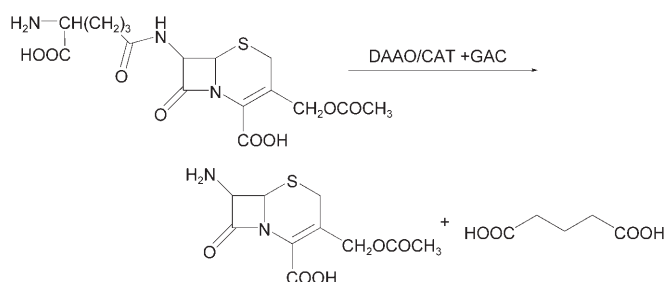
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## UPDATE

# Evaluation of Different Glutaryl Acylase Mutants to Improve the Hydrolysis of Cephalosporin C in the Absence of Hydrogen Peroxide

*Adv. Synth. Catal.* **2008**, 350, 343–348

Fernando López-Gallego, Lorena Betancor, Charles F. Sio, Carlos R. Reis, Pol Nadal Jimenez, Jose M. Guisan, Wim. J. Quax,\* Roberto Fernandez-Lafuente\*



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

\*Author to whom correspondence should be addressed.