

## 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)

New Impact Factor  
**4.977**  
Nº 1 in Organic Chemistry  
for the 4<sup>th</sup> straight year

2009, 351, 4, Pages 477–660

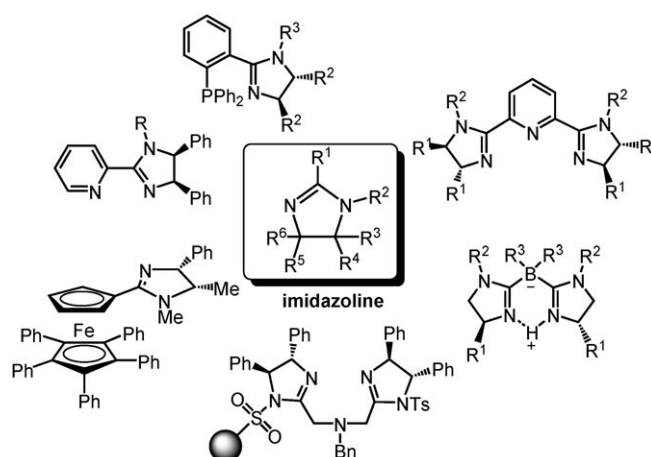
Issue 3/2009 was published online on  
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## REVIEWS

Recent Advances in the Synthesis of 2-Imidazolines and  
Their Applications in Homogeneous Catalysis

*Adv. Synth. Catal.* **2009**, 351, 489–519

Han Liu, Da-Ming Du\*



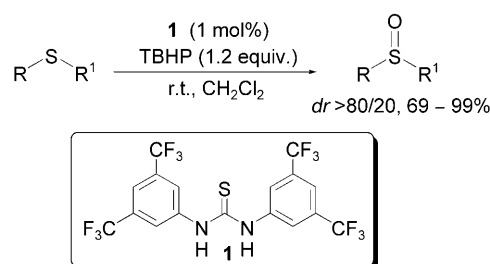
489

# COMMUNICATIONS

## 521 Hydrogen-Bonding Catalysis: Mild and Highly Chemoselective Oxidation of Sulfides

*Adv. Synth. Catal.* **2009**, 351, 521–524

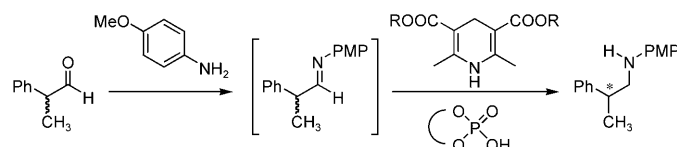
 Alessio Russo, Alessandra Lattanzi\*



## 525 Origin of Enantioselectivity in the Organocatalytic Reductive Amination of $\alpha$ -Branched Aldehydes


*Adv. Synth. Catal.* **2009**, 351, 525–529

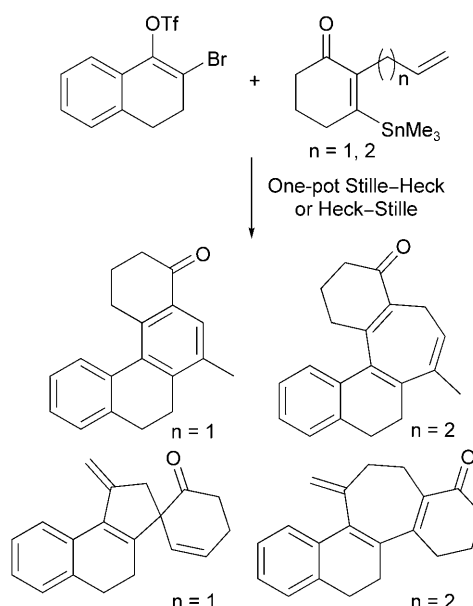
 Tommaso Marcelli, Peter Hammar, Fahmi Himo\*



## 530 Alternation of Chemoselective Control in Stille–Heck and Heck–Stille Reaction Sequences

*Adv. Synth. Catal.* **2009**, 351, 530–536

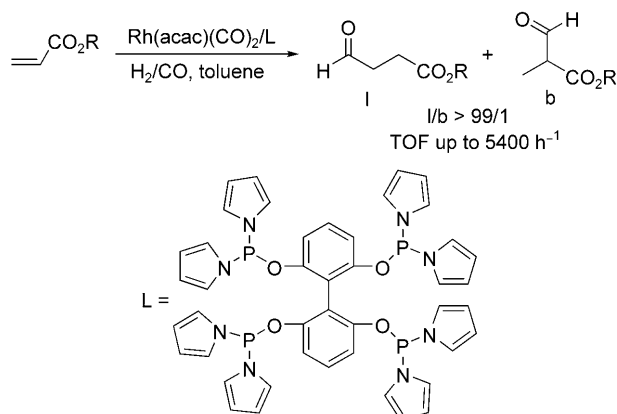
 Kye-Simeon Masters, Bernard L. Flynn\*



## 537 Highly Regioselective and Rapid Hydroformylation of Alkyl Acrylates Catalyzed by a Rhodium Complex with a Tetraphosphorus Ligand


*Adv. Synth. Catal.* **2009**, 351, 537–540

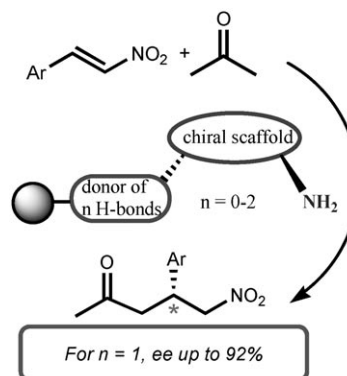
Shichao Yu, Yu-ming Chie, Xumu Zhang\*



Polymer-Supported Highly Enantioselective Catalyst for Nitro-Michael Addition: Tuning through Variation of the Number of H-Bond Donors and Spacer Length

*Adv. Synth. Catal.* **2009**, 351, 541–546


 Lital Tuchman-Shukron, Moshe Portnoy\*

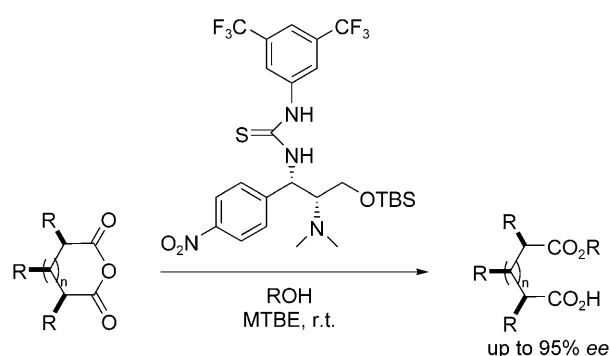


541

A Novel Cost-Effective Thiourea Bifunctional Organocatalyst for Highly Enantioselective Alcoholysis of *meso*-Cyclic Anhydrides: Enhanced Enantioselectivity by Configuration Inversion

*Adv. Synth. Catal.* **2009**, 351, 547–552


 Su-Xi Wang, Fen-Er Chen\*

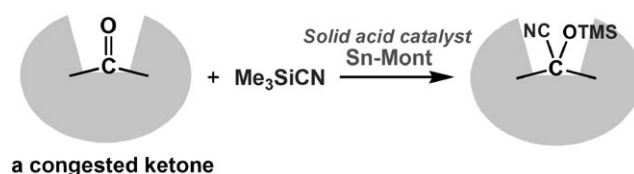


547

Highly Efficient Cyanosilylation of Sterically Bulky Ketones Catalyzed by Tin Ion-Exchanged Montmorillonite

*Adv. Synth. Catal.* **2009**, 351, 553–557

 Jiacheng Wang, Yoichi Masui, Kenya Watanabe, Makoto Onaka\*

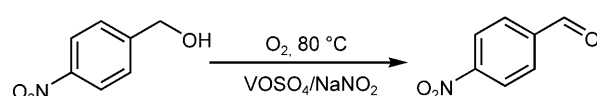


553

Trace Water-Promoted Oxidation of Benzylic Alcohols with Molecular Oxygen Catalyzed by Vanadyl Sulfate and Sodium Nitrite under Mild Conditions

*Adv. Synth. Catal.* **2009**, 351, 558–562

 Zhongtian Du, Hong Miao, Hong Ma, Zhiqiang Sun, Jiping Ma, Jie Xu\*




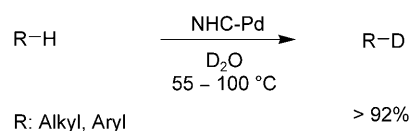
99% conversion, 94% yield

558

An Air/Water-Stable Tridentate N-Heterocyclic Carbene-Palladium(II) Complex: Catalytic C–H Activation of Hydrocarbons *via* Hydrogen/Deuterium Exchange Process in Deuterium Oxide

*Adv. Synth. Catal.* **2009**, 351, 563–568

 Joo Ho Lee, Kyung Soo Yoo, Chan Pil Park, Janet M. Olsen, Satoshi Sakaguchi, G. K. Surya Prakash, Thomas Mathew, Kyung Woon Jung\*

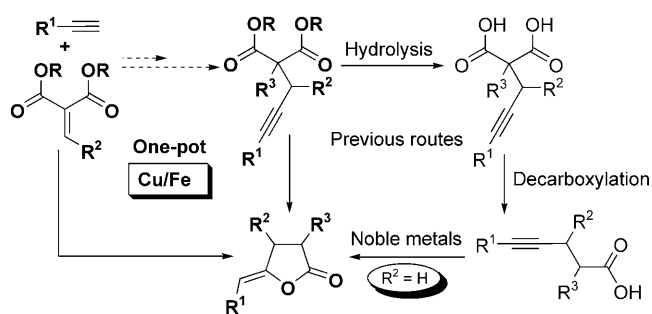


563

- 569** Copper/Iron-Cocatalyzed Highly Selective Tandem Reactions: Efficient Approaches to Z- $\gamma$ -Alkylidene Lactones

*Adv. Synth. Catal.* **2009**, 351, 569–575

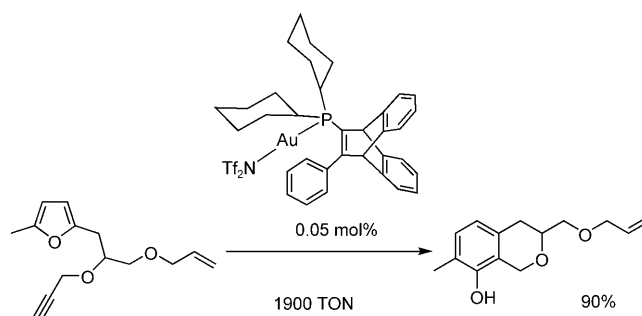
 Si Li, Wei Jia, Ning Jiao\*



- 576** Gold(I) Complexes of KITPHOS Monophosphines: Efficient Cycloisomerisation Catalysts

*Adv. Synth. Catal.* **2009**, 351, 576–582

A. Stephen K. Hashmi,\* Annette Loos, Anna Littmann, Ingo Braun, Julian Knight, Simon Doherty, Frank Rominger

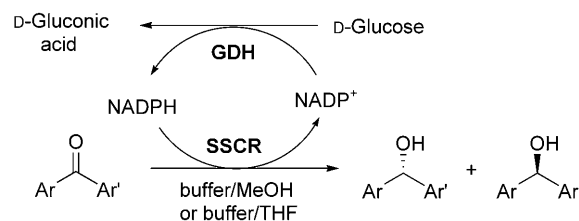


## FULL PAPERS

- 583** Enantioselective Reduction of Diaryl Ketones Catalyzed by a Carbonyl Reductase from *Sporobolomyces salmonicolor* and its Mutant Enzymes


*Adv. Synth. Catal.* **2009**, 351, 583–588

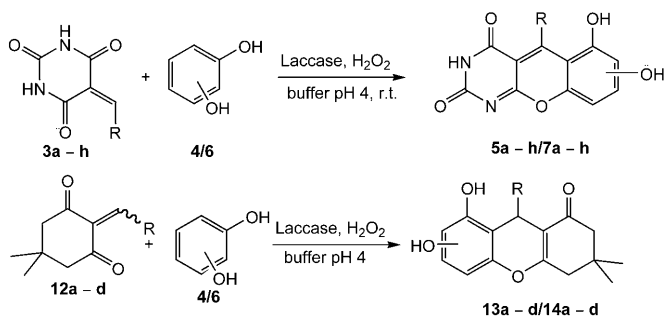
Hongmei Li, Dunming Zhu,\* Ling Hua, Edward R. Biehl



- 589** Laccase from Basidiomycetous Fungus Catalyzes the Synthesis of Substituted 5-Deaza-10-oxaflavins *via* a Domino Reaction

*Adv. Synth. Catal.* **2009**, 351, 589–595

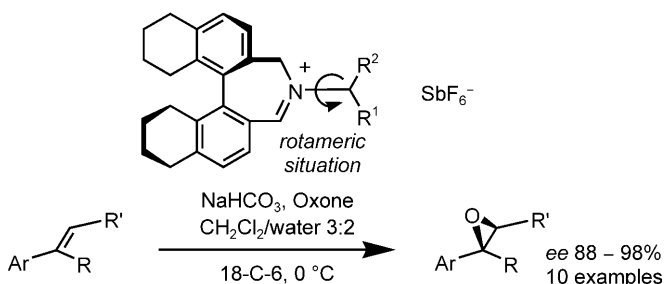
 Mazaahir Kidwai,\* Roona Poddar, Sarika Diwaniyan, Ramesh Chander Kuhad



- 596** Highly Enantioselective Biphasic Iminium-Catalyzed Epoxidation of Alkenes. On the Importance of the Counterion and of N( $sp^2$ )-C( $sp^3$ ) Rotamers

*Adv. Synth. Catal.* **2009**, 351, 596–606

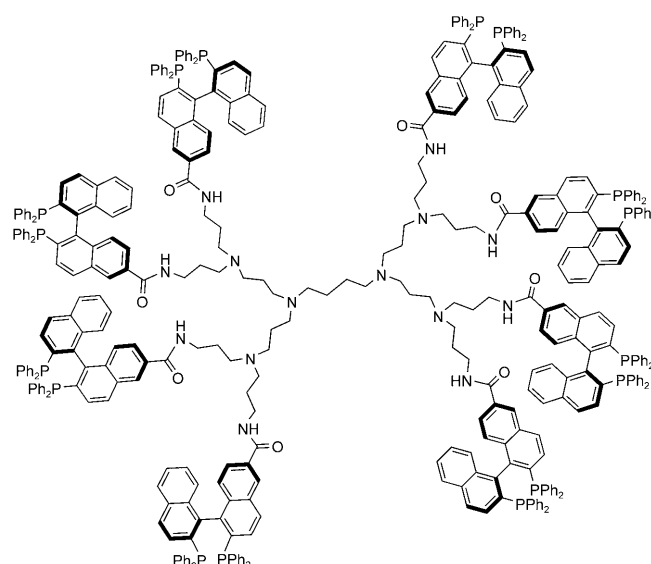
 Roman Novikov, Gérald Bernardinelli, Jérôme Lacour\*



# Immobilisation of the BINAP Ligand on Dendrimers and Hyperbranched Polymers: Dependence of the Catalytic Properties on the Linker Unit

*Adv. Synth. Catal.* **2009**, 351, 607–616

Jutta K. Kassube, Hubert Wadepohl, Lutz H. Gade\*

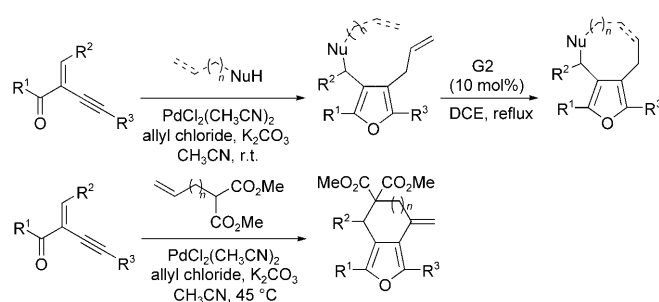


607

# Palladium(II)-Catalyzed Domino Reaction of 2-(1-Alkynyl)-2-alken-1-ones with Nucleophiles: Scope, Mechanism and Synthetic Application in the Synthesis of 3,4-Fused Bicyclic Tetrasubstituted Furans

*Adv. Synth. Catal.* **2009**, 351, 617–629

Yuanjing Xiao, Junliang Zhang\*

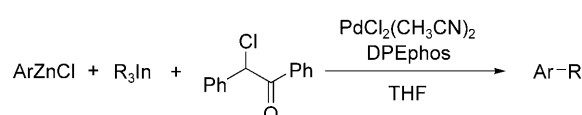


617

# Highly Selective Palladium-Catalyzed Oxidative $Csp^2$ – $Csp^3$ Cross-Coupling of Arylzinc and Alkylindium Reagents through Double Transmetalation

*Adv. Synth. Catal.* **2009**, 351, 630–634

Liqun Jin, Yingsheng Zhao, Lizheng Zhu, Heng Zhang,\*  
Aiwen Lei\*

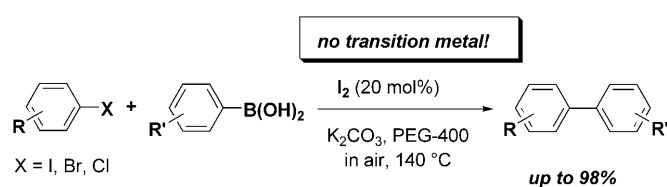


630

# Iodine-Catalyzed Suzuki–Miyaura Coupling Performed in Air

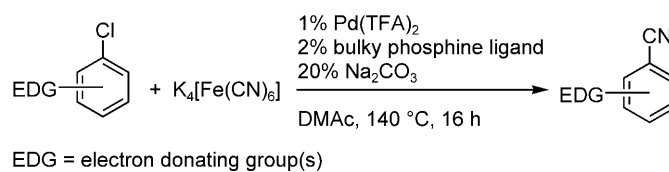
*Adv. Synth. Catal.* **2009**, 351, 635–641

Jincheng Mao,\* Qiongqiong Hua, Guanlei Xie, Jun Guo,  
Zhigang Yao, Daqing Shi, Shunjun Ji

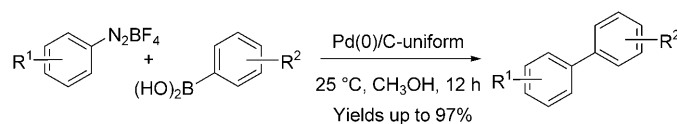


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## UPDATES

**643** Increasing the Scope of Palladium-Catalyzed Cyanations of Aryl Chlorides*Adv. Synth. Catal.* **2009**, 351, 643–648Thomas Schareina, Ralf Jackstell, Thomas Schulz,  
Alexander Zapf, Alain Cotté, Matthias Gotta,  
Matthias Beller\***649** Improved Suzuki–Miyaura Reactions of Aryldiazonium Salts with Boronic Acids by Tuning Palladium on Charcoal Catalyst Properties*Adv. Synth. Catal.* **2009**, 351, 649–655

François-Xavier Felpin,\* Eric Fouquet, Cécile Zakri



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

\* Author to whom correspondence should be addressed.