

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)

ASC
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The Cutting Edge
that Stays Sharp!

2009, 351, 5, Pages 661–804

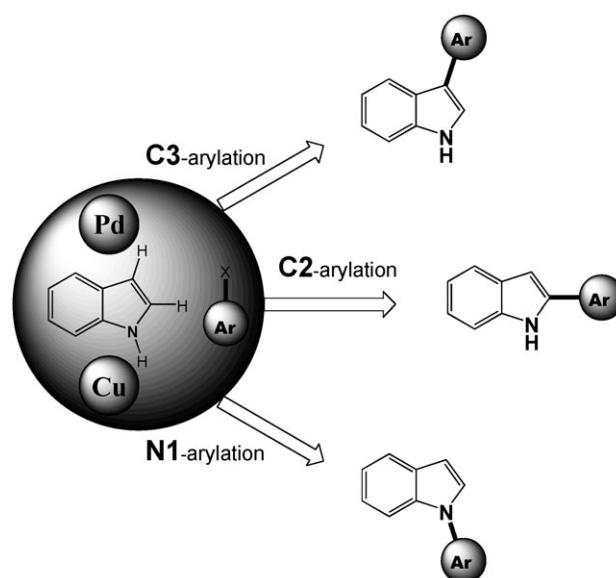
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REVIEW

Transition Metal-Catalysed, Direct and Site-Selective N1-,
C2- or C3-Arylation of the Indole Nucleus: 20 Years of
Improvements

Adv. Synth. Catal. **2009**, 351, 673–714

Lionel Joucla, Laurent Djakovitch*




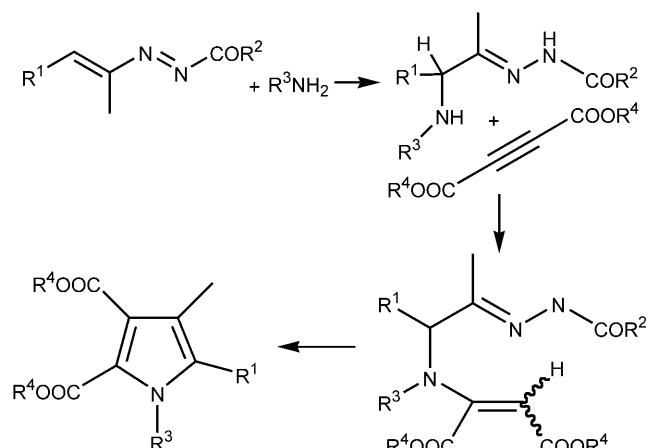
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COMMUNICATIONS

715 Lewis Acid-Catalyzed Synthesis of Functionalized Pyrroles


Adv. Synth. Catal. **2009**, 351, 715–719

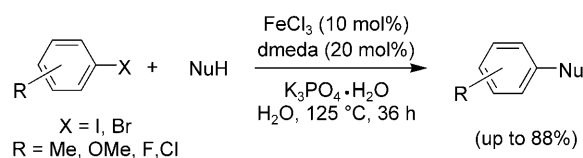
 Orazio A. Attanasi, Stefano Berretta, Lucia De Crescentini, Gianfranco Favi, Gianluca Giorgi, Fabio Mantellini*



720 Efficient Cross-Coupling Reactions of Nitrogen Nucleophiles with Aryl Halides in Water

Adv. Synth. Catal. **2009**, 351, 720–724

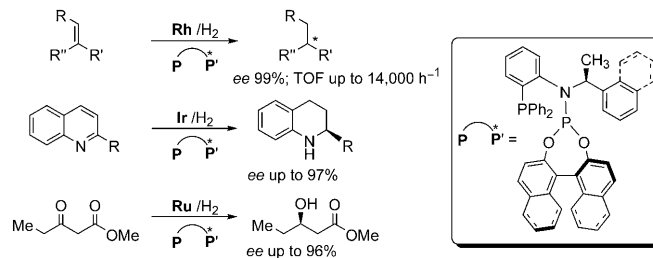
 Yong-Chua Teo*



725 Highly Efficient and Versatile Phosphine-Phosphoramidite Ligands for Asymmetric Hydrogenation

Adv. Synth. Catal. **2009**, 351, 725–732

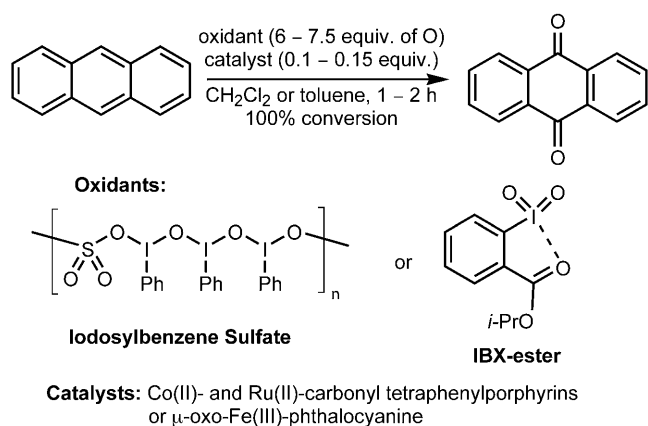
Matthias Eggenstein, Anika Thomas, Jens Theuerkauf, Giancarlo Franciò,* Walter Leitner*



733 Comparative Reactivity of Hypervalent Iodine Oxidants in Metalloporphyrin-Catalyzed Oxygenation of Hydrocarbons: Iodosylbenzene Sulfate and 2-Iodylbenzoic Acid Ester as Safe and Convenient Alternatives to Iodosylbenzene

Adv. Synth. Catal. **2009**, 351, 733–737

Ivan M. Geraskin, Olga Pavlova, Heather M. Neu, Mekhman S. Yusubov, Victor N. Nemykin,* Viktor V. Zhdankin*

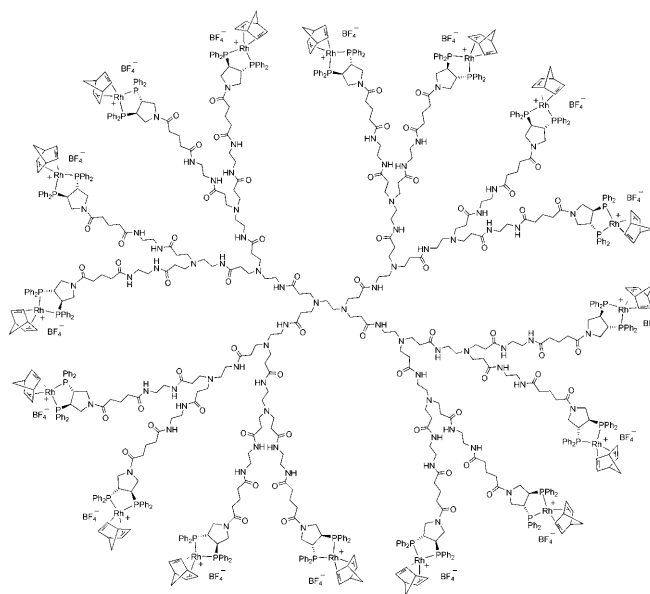


FULL PAPERS

Immobilisation of the Pyrphos Ligand on Soluble Hyperbranched Supports and Use in Rhodium-Catalysed Hydrogenation in Ionic Liquids

Adv. Synth. Catal. **2009**, 351, 739–749

Jutta K. Kassube, Lutz H. Gade*

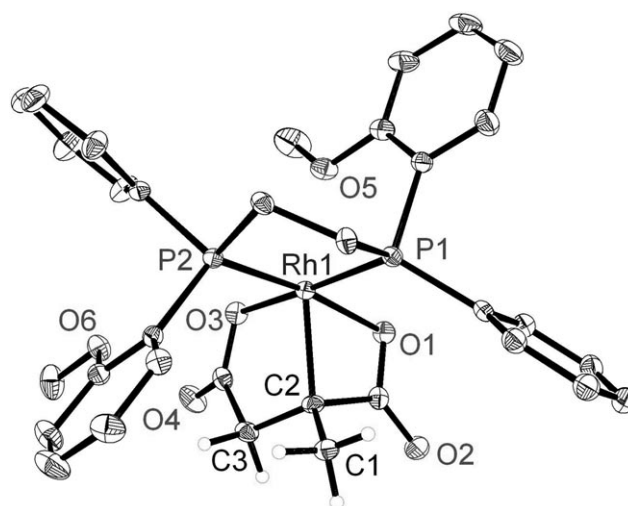


739

Unusual Deactivation in the Asymmetric Hydrogenation of Itaconic Acid

Adv. Synth. Catal. **2009**, 351, 750–754

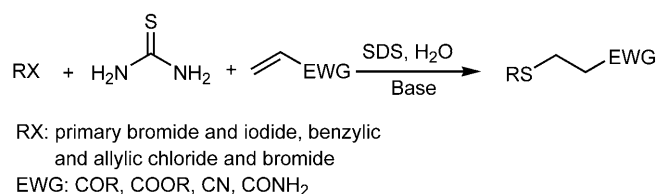
Thomas Schmidt, Hans-Joachim Drexler, Jiangtao Sun, Zhenya Dai, Wolfgang Baumann, Angelika Preetz, Detlef Heller*



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Pronounced Catalytic Effect of a Micellar Solution of Sodium Dodecyl Sulfate (SDS) on the Efficient C-S Bond Formation *via* an Odorless Thia-Michael Addition Reaction through the *in situ* Generation of *S*-Alkylisothiuronium Salts*Adv. Synth. Catal.* **2009**, 351, 755–766

Habib Firouzabadi,* Nasser Iranpoor,* Mohammad Abbasi

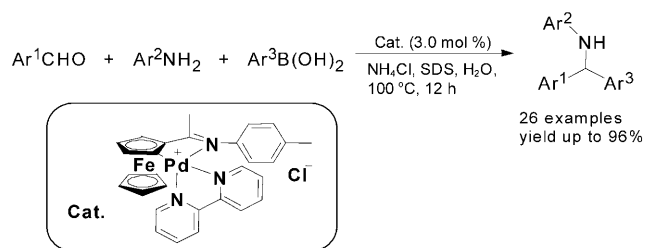


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- 767** A Mild, One-Pot Synthesis of Arylamines *via* Palladium-Catalyzed Addition of Aryl Aldehydes with Amines and Arylboronic Acids in Water


Adv. Synth. Catal. **2009**, 351, 767–771

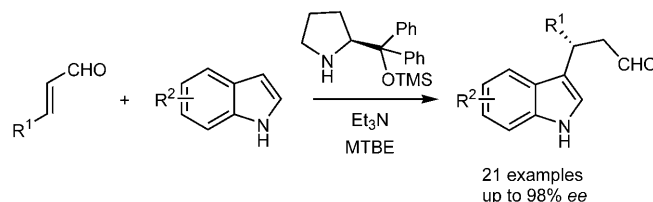
 Ajuan Yu, Yangjie Wu,* Baoli Cheng, Kun Wei, Jingya Li



- 772** An Efficient Enantioselective Method for Asymmetric Friedel–Crafts Alkylation of Indoles with α,β -Unsaturated Aldehydes


Adv. Synth. Catal. **2009**, 351, 772–778

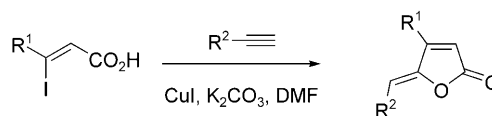
 Liang Hong, Lei Wang, Chao Chen, Bangzhi Zhang, Rui Wang*



- 779** Copper-Catalyzed Preparation of γ -Alkylidenebutenolides and Isocoumarins under Mild Palladium-Free Conditions

Adv. Synth. Catal. **2009**, 351, 779–788

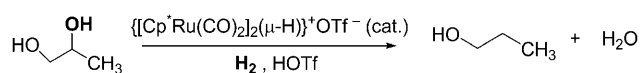
 Samuel Inack-Ngi, Raphaël Rahmani, Laurent Commeiras, Gaëlle Chouraqui, Jérôme Thibonnet, Alain Duchêne, Mohamed Abarbri,* Jean-Luc Parrain*




- 789** Catalytic Deoxygenation of 1,2-Propanediol to Give *n*-Propanol

Adv. Synth. Catal. **2009**, 351, 789–800

Marcel Schlaf, Prasenjit Ghosh, Paul J. Fagan, Elisabeth Hauptman, R. Morris Bullock*



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