

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.

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2005, 347, 9, Pages 1177–1314

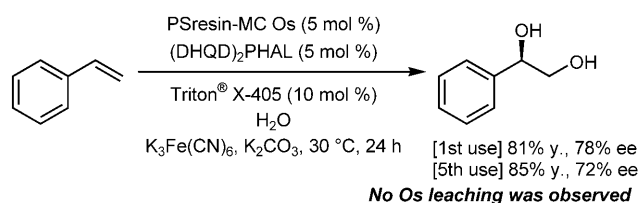
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COMMUNICATIONS

A Novel Microencapsulated Osmium Catalyst Using Cross-Linked Polystyrene as an Efficient Catalyst for Asymmetric Dihydroxylation of Olefins in Water

Adv. Synth. Catal. **2005**, 347, 1189–1192

Tasuku Ishida, Ryo Akiyama, Shū Kobayashi*

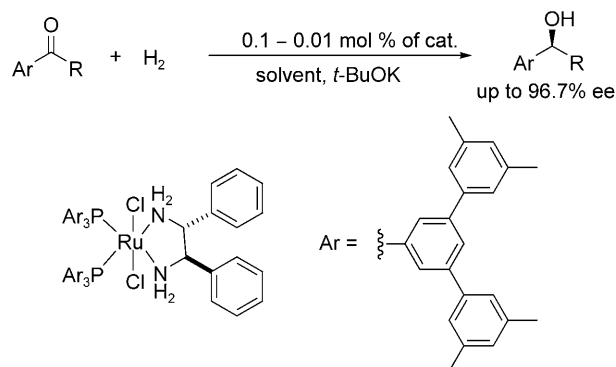


1189

Bulky Achiral Triarylphosphines Mimic BINAP in Ru(II)-Catalyzed Asymmetric Hydrogenation of Ketones

Adv. Synth. Catal. **2005**, 347, 1193–1197

Qing Jing, Xue Zhang, Jie Sun, Kuiling Ding*



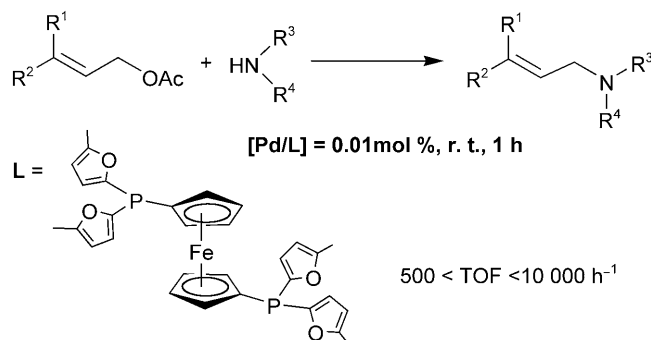
1193

- 1198** Diphosphines of dppf-Type Incorporating Electron-Withdrawing Furyl Moieties Substantially Improve the Palladium-Catalysed Amination of Allyl Acetates

Adv. Synth. Catal. **2005**, 347, 1198–1202



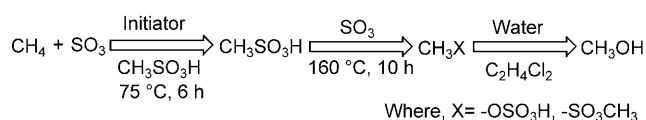
Aziz Fihri, Jean-Cyrille Hierso,* Anthony Vion, Duc Hanh Nguyen, Martine Urrutigoity,* Philippe Kalck, Régine Amardeil, Philippe Meunier



- 1203** A High-Yield, Liquid-Phase Approach for the Partial Oxidation of Methane to Methanol using SO_3 as the Oxidant

Adv. Synth. Catal. **2005**, 347, 1203–1206

Sudip Mukhopadhyay,* Mark Zerella, Alexis T. Bell*

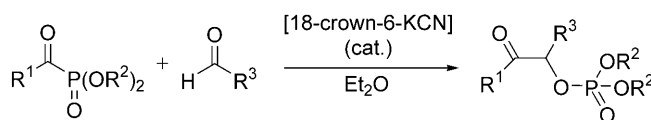


- 1207** Cyanide-Catalyzed Additions of Acyl Phosphonates to Aldehydes: A New Acyl Donor for Benzoin-Type Reactions

Adv. Synth. Catal. **2005**, 347, 1207–1211



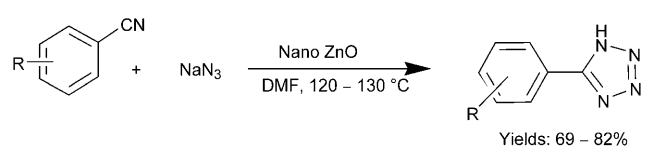
Cory C. Bausch, Jeffrey S. Johnson*



- 1212** Nanocrystalline ZnO as an Efficient Heterogeneous Catalyst for the Synthesis of 5-Substituted 1*H*-Tetrazoles

Adv. Synth. Catal. **2005**, 347, 1212–1214

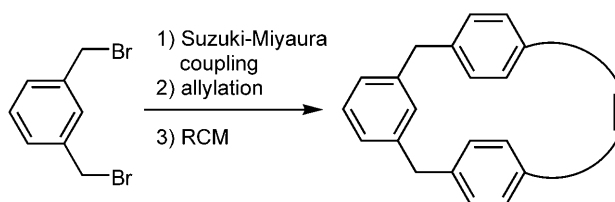
M. Lakshmi Kantam,* K. B. Shiva Kumar, Ch. Sridhar



- 1215** New Synthetic Approach to a [1.1.6] Metapara Cyclophane Derivative via Suzuki–Miyaura Cross-Coupling and Ring-Closing Metathesis

Adv. Synth. Catal. **2005**, 347, 1215–1218

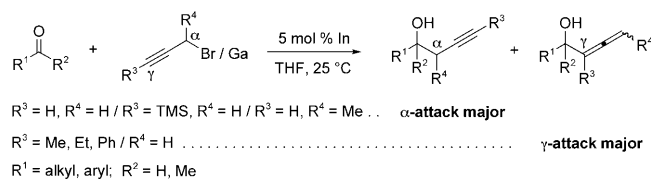
Sambasivarao Kotha,* Kalyaneswar Mandal, Kapildev K. Arora, V. R. Pedireddi



- 1219** Regioselective Addition Reactions of Propargyl Bromides to Carbonyl Compounds with Gallium Catalyzed by Indium

Adv. Synth. Catal. **2005**, 347, 1219–1222

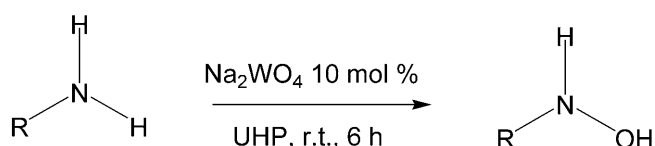
Phil Ho Lee,* Hyun Kim, Kooyeon Lee



Oxidation of Primary Amines to *N*-Monoalkylhydroxylamines using Sodium Tungstate and Hydrogen Peroxide-Urea Complex

Adv. Synth. Catal. **2005**, 347, 1223–1225

Akbar Heydari,* Saied Aslanzadeh



R = alkyl, chiral benzylic and α -amino esters

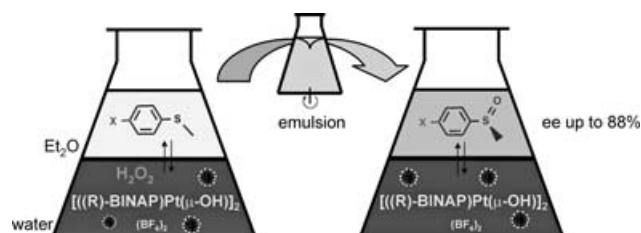
1223

FULL PAPERS

Asymmetric Sulfoxidation of Thioethers with Hydrogen Peroxide in Water Mediated by Platinum Chiral Catalyst

Adv. Synth. Catal. **2005**, 347, 1227–1234

Alessandro Scarso, Giorgio Strukul*

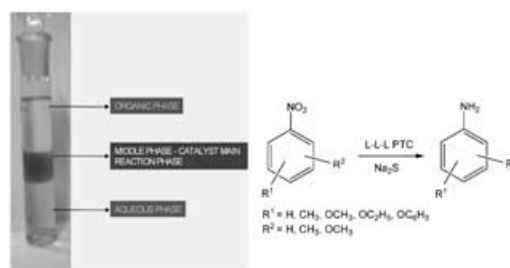


1227

Liquid-Liquid-Liquid Phase Transfer Catalysis: A Novel and Green Concept for Selective Reduction of Substituted Nitroaromatics

Adv. Synth. Catal. **2005**, 347, 1235–1241

Ganapati D. Yadav,* Sharad V. Lande



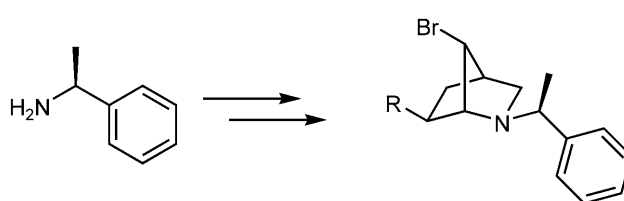
1235

Synthesis of 6-Substituted 7-Bromoazabicyclo[2.2.1]heptanes via Nucleophilic Addition to 3-Bromo-1-azoniatricyclo[2.2.1.0]heptane Bromide

Adv. Synth. Catal. **2005**, 347, 1242–1246



Arnaud Gayet, Pher G. Andersson*



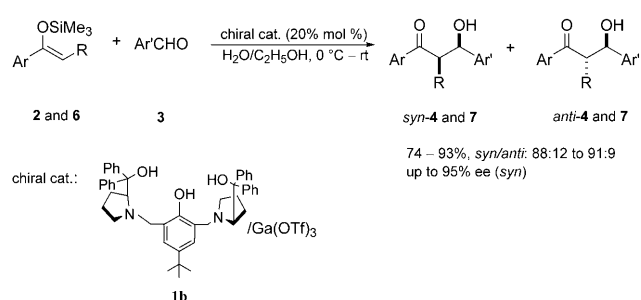
1242

Aqueous Asymmetric Mukaiyama Aldol Reaction Catalyzed by Chiral Gallium Lewis Acid with Trost-Type Semi-Crown Ligands

Adv. Synth. Catal. **2005**, 347, 1247–1256



Hui-Jing Li, Hong-Yu Tian, Yan-Chao Wu, Yong-Jun Chen, Li Liu, Dong Wang,* Chao-Jun Li*

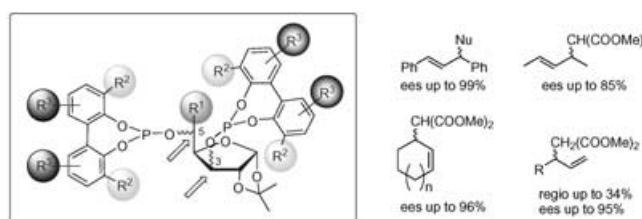


1247

Modular Furanoside Diphosphite Ligands for Pd-Catalyzed Asymmetric Allylic Substitution Reactions: Scope and Limitations

Adv. Synth. Catal. **2005**, 347, 1257–1266

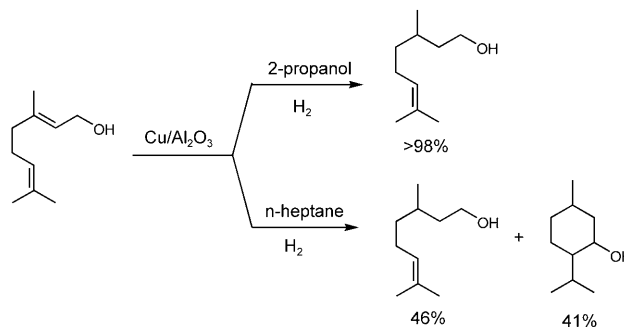
Montserrat Diéguez,* Oscar Pàmies,* Carmen Claver



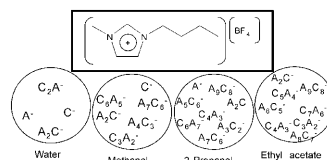
1257

1267 Tuning Selectivity in Terpene Chemistry: Selective Hydrogenation *versus* Cascade Reactions over Copper Catalysts*Adv. Synth. Catal.* **2005**, 347, 1267–1272

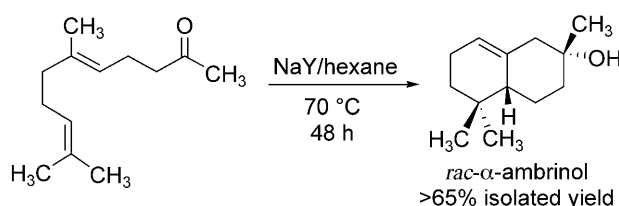
F. Zaccheria, N. Ravasio,* A. Fusi, M. Rodondi, R. Psaro

**1273** Investigation on Aggregate Formation of Ionic Liquids*Adv. Synth. Catal.* **2005**, 347, 1273–1279

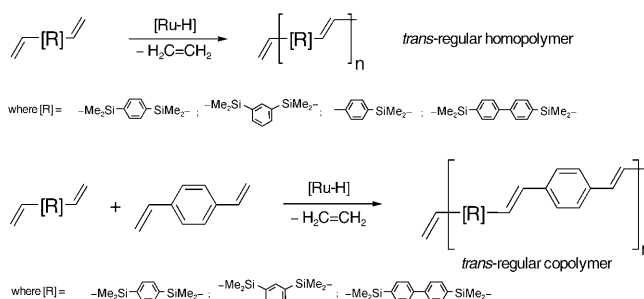
Sandra Dorbritz, Wolfgang Ruth, Udo Kragl*

**1280** Biomimetic Cyclization of Small Terpenoids Promoted by Zeolite NaY: Tandem Formation of α -Ambrinol from Geranyl Acetone*Adv. Synth. Catal.* **2005**, 347, 1280–1284

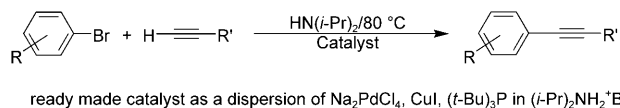
Constantinos Tsangarakis, Manolis Stratakis*

**1285** Highly Stereoselective Synthesis of Arylene-Silylene-Vinylene Polymers*Adv. Synth. Catal.* **2005**, 347, 1285–1294

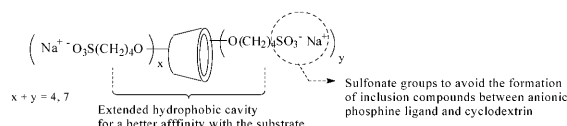
Mariusz Majchrzak, Bogdan Marciniec,* Yujiro Itami

**UPDATES****1295** A Convenient High Activity Catalyst for the Sonogashira Coupling of Aryl Bromides*Adv. Synth. Catal.* **2005**, 347, 1295–1300

Axel Köllhofer, Herbert Plenio*

ready made catalyst as a dispersion of Na_2PdCl_4 , CuI, $(t\text{-Bu})_3\text{P}$ in $(i\text{-Pr})_2\text{NH}_2^+\text{Br}^-$ **1301** Sulfobutyl Ether- β -Cyclodextrins: Promising Supramolecular Carriers for Aqueous Organometallic Catalysis*Adv. Synth. Catal.* **2005**, 347, 1301–1307

Philippe Blach, David Landy, Sophie Fourmentin, Gheorghe Surpateanu, Hervé Bricout, Anne Ponchel, Frédéric Hapiot, Eric Monflier*



BOOK REVIEW

Transition Metal Arene π -Complexes in Organic Synthesis
and Catalysis

Adv. Synth. Catal. **2005**, 347, 1309
Karl Heinz Dötz

1309

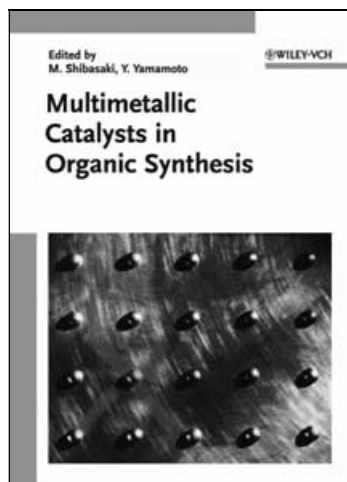
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