

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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2005, 347, 1, Pages 1–202

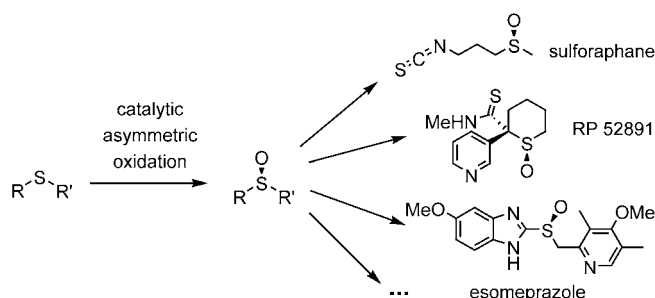
Issue 13–15/2004 was published online on December 16, 2004

REVIEWS

Applications of Catalytic Asymmetric Sulfide Oxidations to the Syntheses of Biologically Active Sulfoxides

Adv. Synth. Catal. **2005**, 347, 19–32

Julien Legros, Juan R. Dehli, Carsten Bolm*



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COMMUNICATIONS

Highly Efficient Solvent-Free Condensation of Carboxylic Acids with Alcohols Catalysed by Zinc Perchlorate Hexahydrate, $\text{Zn}(\text{ClO}_4)_2 \cdot 6 \text{H}_2\text{O}$

Adv. Synth. Catal. **2005**, 347, 33–38

G. Bartoli,* J. Boeglin, M. Bosco, M. Locatelli,
M. Massaccesi, P. Melchiorre, L. Sambri



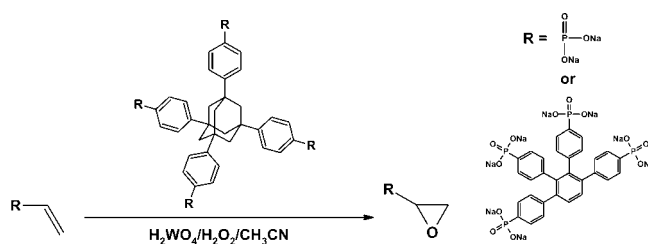
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- 39** Dendritic Phosphonates and the *in situ* Assembly of Polyperoxophosphotungstates: Synthesis and Catalytic Epoxidation of Alkenes with Hydrogen Peroxide

Adv. Synth. Catal. **2005**, 347, 39–44



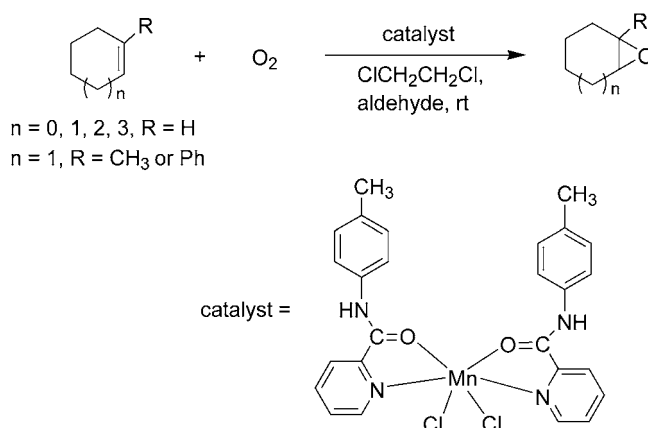
Maxym V. Vasylyev, Didier Astruc, Ronny Neumann*



- 45** Novel Manganese Complex as an Efficient Catalyst for the Isobutyraldehyde-Mediated Epoxidation of Cyclic Alkenes with Dioxxygen

Adv. Synth. Catal. **2005**, 347, 45–49

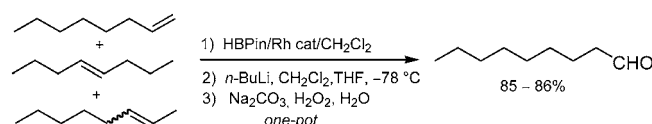
Jian-Ying Qi, Yue-Ming Li, Zhong-Yuan Zhou, Chi-Ming Che, Chi-Hung Yeung,* Albert S. C. Chan*



- 50** One-Pot Carbon Monoxide-Free Hydroformylation of Internal Olefins to Terminal Aldehydes

Adv. Synth. Catal. **2005**, 347, 50–54

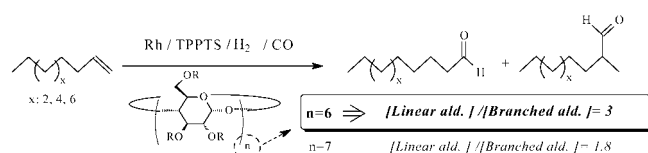
David R. Edwards, Cathleen M. Crudden,* Katherine Yam



- 55** Two-Phase Hydroformylation of Higher Olefins Using Randomly Methylated α -Cyclodextrin as Mass Transfer Promoter: A Smart Solution for Preserving the Intrinsic Properties of the Rhodium/Trisulfonated Triphenylphosphine Catalytic System

Adv. Synth. Catal. **2005**, 347, 55–59

Loïc Leclercq, Mathieu Sauthier, Yves Castanet, André Mortreux, Hervé Bricout, Eric Monflier*



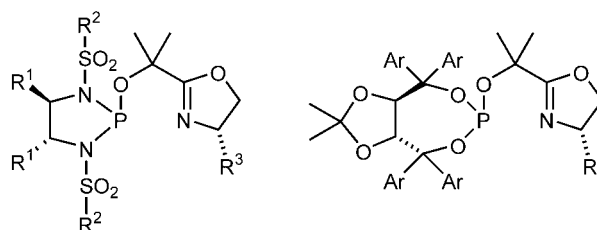
FULL PAPERS

- 61** Chiral Bis(*N*-sulfonylamino)phosphine- and TADDOL-Phosphite-Oxazoline Ligands: Synthesis and Application in Asymmetric Catalysis

Adv. Synth. Catal. **2005**, 347, 61–77



Robert Hilgraf, Andreas Pfaltz*

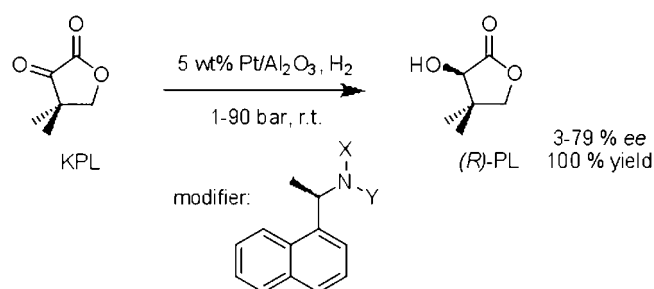


Synthetic Modifiers for Platinum in the Enantioselective Hydrogenation of Ketopantolactone: A Test for the Mechanistic Models of Ketone Hydrogenation

Adv. Synth. Catal. **2005**, 347, 78–86



Elisabeth Orglmeister, Tamas Mallat, Alfons Baiker*



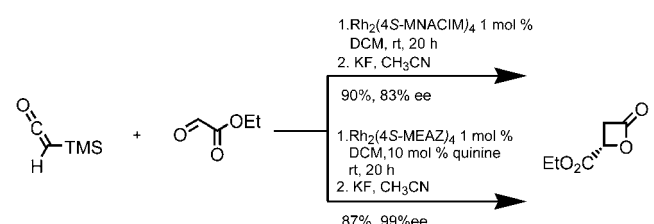
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Chiral Dirhodium(II) Carboxamidate-Catalyzed [2 + 2]-Cycloaddition of TMS-Ketene and Ethyl Glyoxylate

Adv. Synth. Catal. **2005**, 347, 87–92



Raymond E. Forslund, James Cain, John Colyer, Michael P. Doyle*

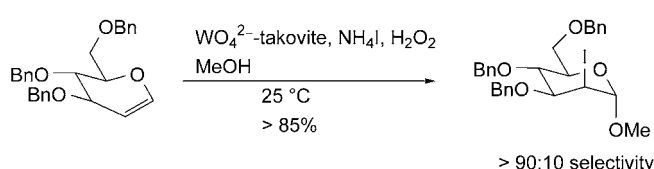


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A New Catalytic Route for the Oxidative Halogenation of Cyclic Enol Ethers using Tungstate Exchanged on Takovite

Adv. Synth. Catal. **2005**, 347, 93–104

B. Sels, P. Levecque, R. Brosius, D. De Vos, P. Jacobs,*
D. W. Gammon, H. H. Kinfe



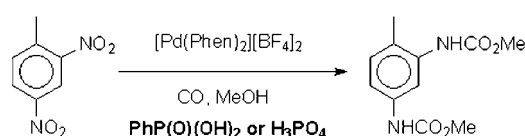
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Carbonylation of Dinitrotoluene to Dimethyl Toluenedicarbamate; High Efficiency of Phosphorus Acids as Promoters for the Palladium-Phenanthroline Catalytic System

Adv. Synth. Catal. **2005**, 347, 105–120



Michela Gasperini, Fabio Ragaini,* Chiara Cazzaniga, Sergio Cenini

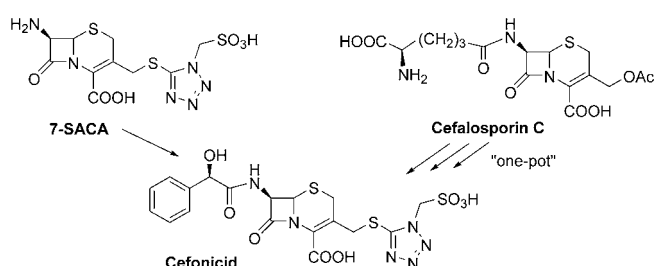


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Influence of Substrate Structure on PGA-Catalyzed Acylations. Evaluation of Different Approaches for the Enzymatic Synthesis of Cefonicid

Adv. Synth. Catal. **2005**, 347, 121–128

Marco Terreni,* Joseph Gapesie Tchamkam, Umberto Sarnataro, Silvia Rocchietti, Roberto Fernández-Lafuente, José M. Guisán



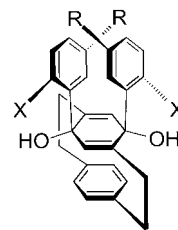
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- 129** Highly Stereoselective Synthesis of Novel Multistereogenic Bis-Bifunctional Ligands Based on [2.2]Paracyclophane-4,7-quinone, their Structure Elucidation and Application in Asymmetric Catalysis

Adv. Synth. Catal. **2005**, 347, 129–135



Natalia Vorontsova, Evgenii Vorontsov, Dmitrii Antonov, Zoya Starikova, Kim Butin, Stefan Bräse, Sebastian Höfener, Valeria Rozenberg*

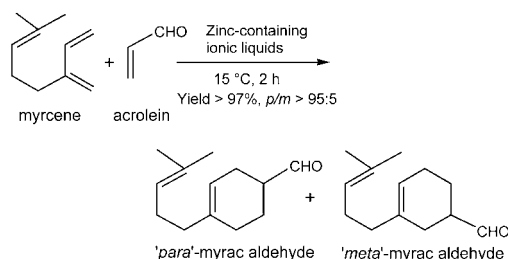


UPDATES

- 137** High Regioselective Diels–Alder Reaction of Myrcene with Acrolein Catalyzed by Zinc-Containing Ionic Liquids

Adv. Synth. Catal. **2005**, 347, 137–142

Donghong Yin,* Changzhi Li, Biaomo Li, Liang Tao, Dulin Yin



CROSS-COUPLING AND HECK CLUSTER-FULL PAPERS

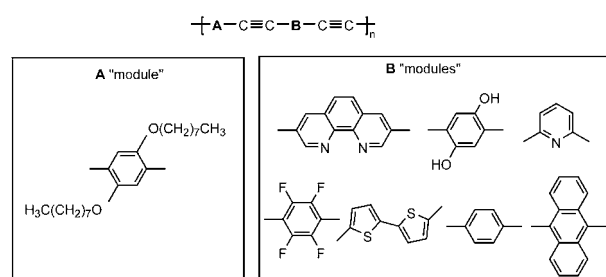
The following articles, intended for the Cross-Coupling and Heck Issue 13–15, 2004, were moved to this issue because of end-of-year production deadlines.

- 143** Use of the Pd-Promoted *Extended One-Pot (EOP)* Synthetic Protocol for the Modular Construction of Poly-(arylene ethynylene) *co*-Polymers $[-\text{Ar}-\text{C}\equiv\text{C}-\text{Ar}'-\text{C}\equiv\text{C}-]_n$, Opto- and Electro-Responsive Materials for Advanced Technology

Adv. Synth. Catal. **2005**, 347, 143–160



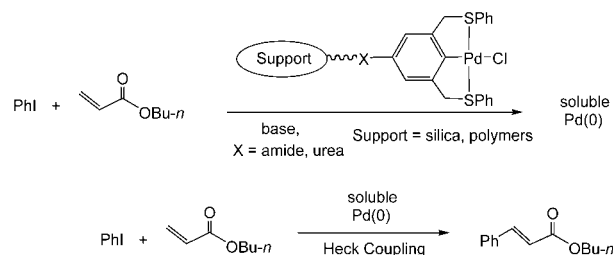
Alessandra Micozzi, Monica Ottaviani, Giorgio Giardina, Antonella Ricci, Roberto Pizzoferrato, Tiffany Ziller, Dario Compagnone, Claudio Lo Sterzo*



- 161** Evidence that SCS Pincer Pd(II) Complexes are only Precatalysts in Heck Catalysis and the Implications for Catalyst Recovery and Reuse

Adv. Synth. Catal. **2005**, 347, 161–171

Kunquan Yu, William Sommer, John M. Richardson, Marcus Weck,* Christopher W. Jones*

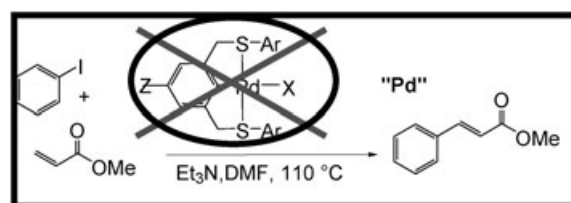


- 172** Mechanistic Studies of SCS-Pd Complexes Used in Heck Catalysis

Adv. Synth. Catal. **2005**, 347, 172–184



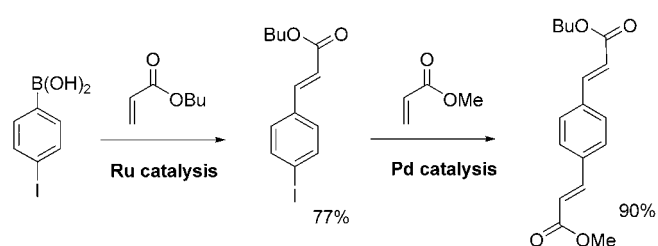
David E. Bergbreiter,* Philip L. Osburn, Jonathon D. Frels



Ruthenium Complex-Catalysed Heck Reactions of Areneboronic Acids; Mechanism, Synthesis and Halide Tolerance

Adv. Synth. Catal. **2005**, 347, 185–195

Edward J. Farrington, Christopher F. J. Barnard, Elizabeth Rowsell, John M. Brown*

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BOOK REVIEWS

Metal-Catalyzed Cross-Coupling Reactions
edited by Armin de Meijere, Francois Diederich

Adv. Synth. Catal. **2005**, 347, 197
Rainer Stürmer



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

*Author to whom correspondence should be addressed.