

## 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. 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 metal catalysis, biocatalysis and organocatalysis 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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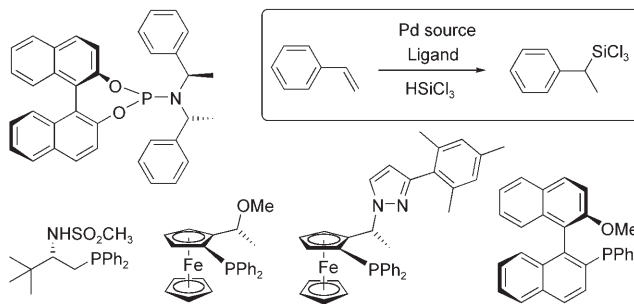
Issue 4–5/2007 was published online on March 5, 2007

## REVIEW

### The Role of Secondary Interactions in the Asymmetric Palladium-Catalysed Hydrosilylation of Olefins with Monophosphane Ligands

*Adv. Synth. Catal.* **2007**, 349, 781–795

Susan E. Gibson,\* Matthew Rudd




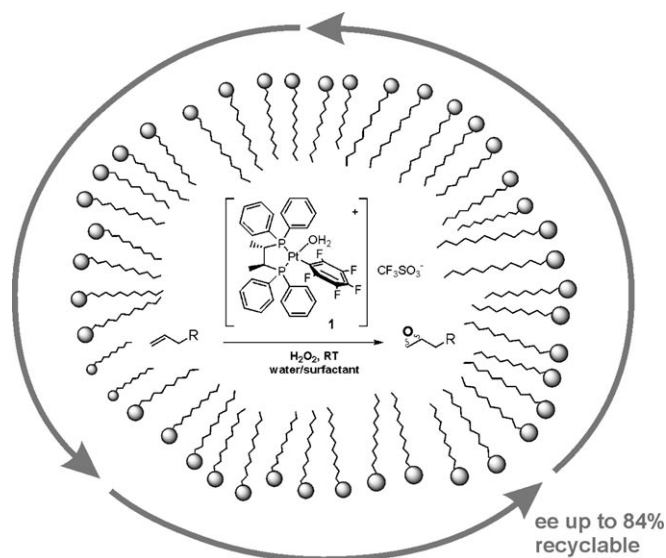
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## COMMUNICATIONS

- 797** Towards a Greener Epoxidation Method: Use of Water-Surfactant Media and Catalyst Recycling in the Platinum-Catalyzed Asymmetric Epoxidation of Terminal Alkenes with Hydrogen Peroxide


*Adv. Synth. Catal.* **2007**, 349, 797–801

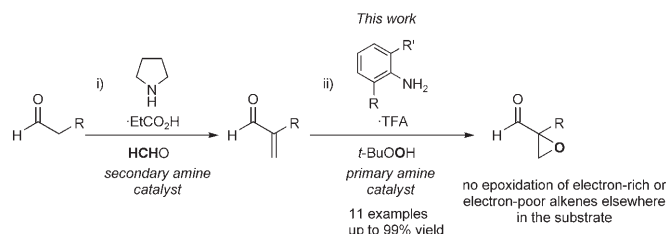
 Marco Colladon, Alessandro Scarso, Giorgio Strukul\*



- 802** Simple Primary Anilines as Iminium Catalysts for the Epoxidation of  $\alpha$ -Substituted Acroleins

*Adv. Synth. Catal.* **2007**, 349, 802–806

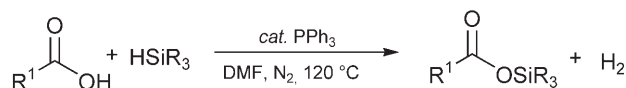
 Anniina Erkkilä, Petri M. Pihko,\* Melanie-Rose Clarke



- 807** Triphenylphosphine-Catalyzed Dehydrogenative Coupling Reaction of Carboxylic Acids with Silanes – A Convenient Method for the Preparation of Silyl Esters


*Adv. Synth. Catal.* **2007**, 349, 807–811

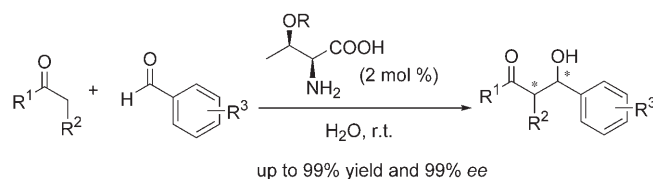
Guo-Bin Liu,\* Hong-Yun Zhao, Thies Thiemann



- 812** Highly Efficient Threonine-Derived Organocatalysts for Direct Asymmetric Aldol Reactions in Water

*Adv. Synth. Catal.* **2007**, 349, 812–816

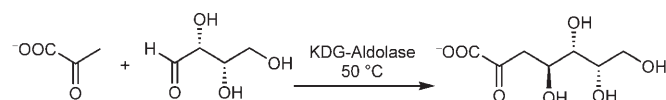
 Xiaoyu Wu, Zhaoqin Jiang, Han-Ming Shen, Yixin Lu\*



- 817** A Thermostable Aldolase for the Synthesis of 3-Deoxy-2-ulosonic Acids


*Adv. Synth. Catal.* **2007**, 349, 817–821

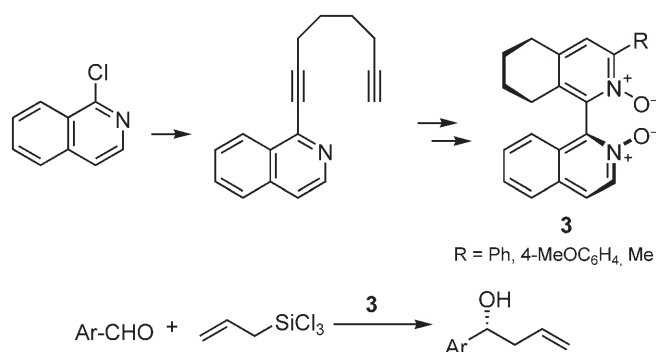
Henry J. Lamble, Sylvain F. Royer, David W. Hough,  
Michael J. Danson, Garry L. Taylor, Steven D. Bull\*



A Simple Approach to Unsymmetric Atropoisomeric Bipyridine *N,N'*-Dioxides and Their Application in Enantioselective Allylation of Aldehydes

*Adv. Synth. Catal.* **2007**, 349, 822–826


 Radim Hrdina, Irena Valterová, Jana Hodačová, Ivana Císařová, Martin Kotora\*

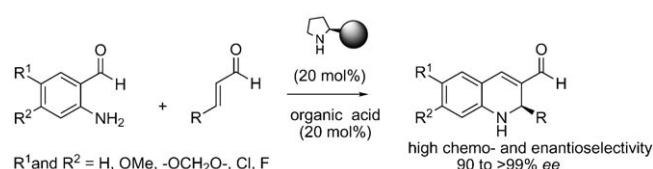


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A Highly Enantioselective Catalytic Domino Aza-Michael/Aldol Reaction: One-Pot Organocatalytic Asymmetric Synthesis of 1,2-Dihydroquinolidines

*Adv. Synth. Catal.* **2007**, 349, 827–832


 Henrik Sundén, Ramon Rios, Ismail Ibrahim, Gui-Ling Zhao, Lars Eriksson, Armando Córdova\*

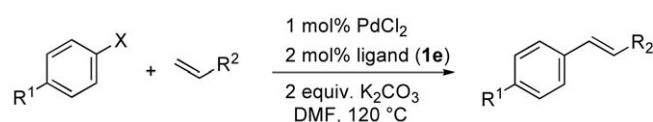


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Imidazole and Imidazoline Derivatives as *N*-Donor Ligands for Palladium-Catalyzed Mizoroki–Heck Reaction

*Adv. Synth. Catal.* **2007**, 349, 833–835


 Satoshi Haneda, Chigusa Ueba, Kazuo Eda, Masahiko Hayashi\*

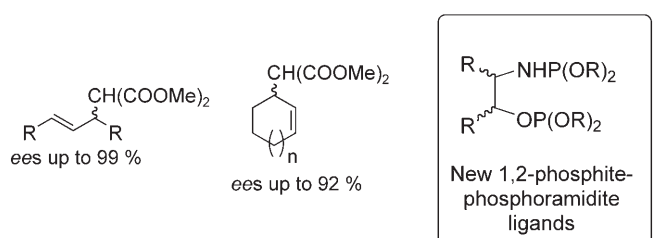


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New Highly Effective Phosphite-Phosphoramidite Ligands for Palladium-Catalysed Asymmetric Allylic Alkylation Reactions

*Adv. Synth. Catal.* **2007**, 349, 836–840

 Oscar Pàmies,\* Montserrat Diéguez,\* Carmen Claver

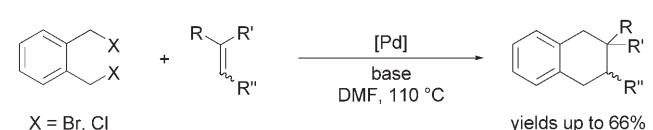


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Palladium-Catalyzed Synthesis of Functional Tetralins via Benzylic Activation

*Adv. Synth. Catal.* **2007**, 349, 841–845


Benoît Liégault, Jean-Luc Renaud,\* Christian Bruneau\*

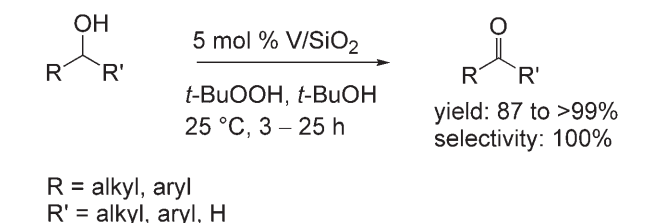


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Vanadium-Catalyzed Selective Oxidation of Alcohols to Aldehydes and Ketones with *tert*-Butyl Hydroperoxide

*Adv. Synth. Catal.* **2007**, 349, 846–848


 Laxmidhar Rout, Pinku Nath, Tharmalingam Punniyamurthy\*

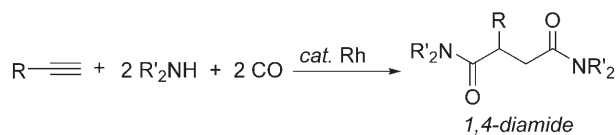


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- 849** An Efficient Rhodium-Catalyzed Double Hydroaminocarbonylation of Alkynes with Carbon Monoxide and Amines Affording 1,4-Diamide Derivatives

*Adv. Synth. Catal.* **2007**, 349, 849–852

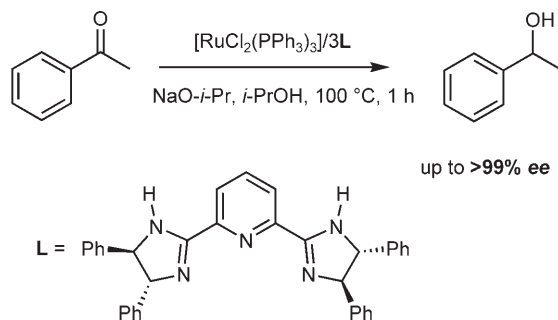
 Qiufeng Huang, Ruimao Hua\*



- 853** New Ruthenium Catalysts for Asymmetric Transfer Hydrogenation of Prochiral Ketones

*Adv. Synth. Catal.* **2007**, 349, 853–860

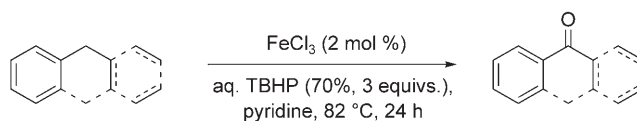
Stephan Enthaler, Bernhard Hagemann, Santosh Bhor, Gopinathan Anilkumar, Man Kin Tse, Bianca Bitterlich, Kathrin Junge, Giulia Erre, Matthias Beller\*



- 861** Iron-Catalyzed Benzylic Oxidation with Aqueous *tert*-Butyl Hydroperoxide


*Adv. Synth. Catal.* **2007**, 349, 861–864

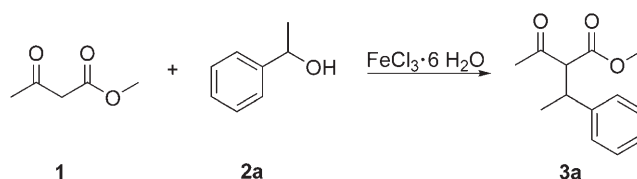
Masafumi Nakanishi, Carsten Bolm\*



- 865** A General and Efficient Iron-Catalyzed Benzylation of 1,3-Dicarbonyl Compounds


*Adv. Synth. Catal.* **2007**, 349, 865–870

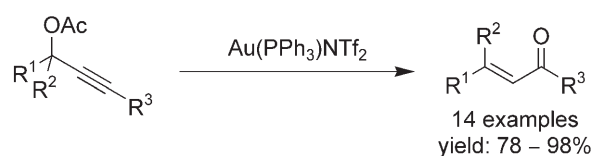
 Jette Kischel, Kristin Mertins, Dirk Michalik, Alexander Zapf, Matthias Beller\*



- 871** Gold-Catalyzed Efficient Formation of  $\alpha,\beta$ -Unsaturated Ketones from Propargylic Acetates

*Adv. Synth. Catal.* **2007**, 349, 871–875

 Meng Yu, Guotao Li, Shaozhong Wang, Liming Zhang\*

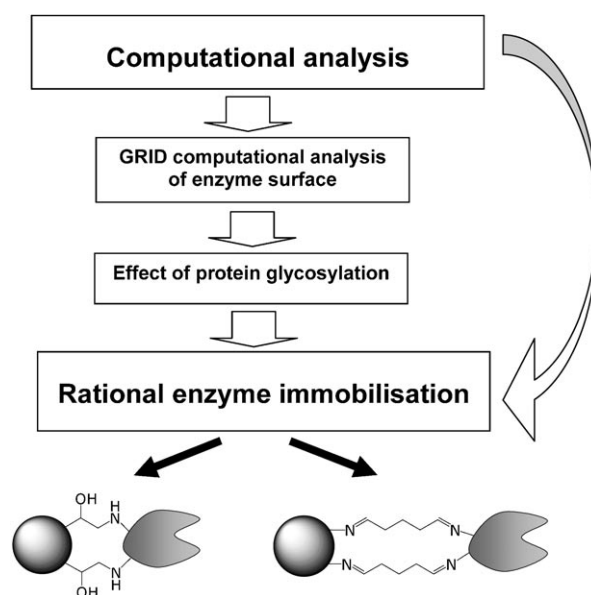


## FULL PAPERS

*In Silico* Analysis of Enzyme Surface and Glycosylation Effect as a Tool for Efficient Covalent Immobilisation of CalB and PGA on Sepabeads®

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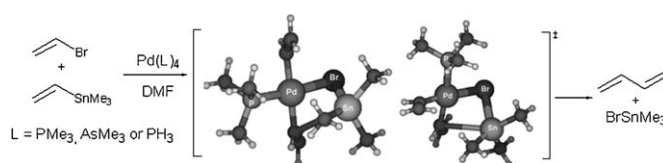
Alessandra Basso, Paolo Braiuca, Sara Cantone, Cynthia Ebert, Paolo Linda, Patrizia Spizzo, Paolo Caimi, Ulf Hanefeld, Giuliano Degrossi, Lucia Gardossi\*



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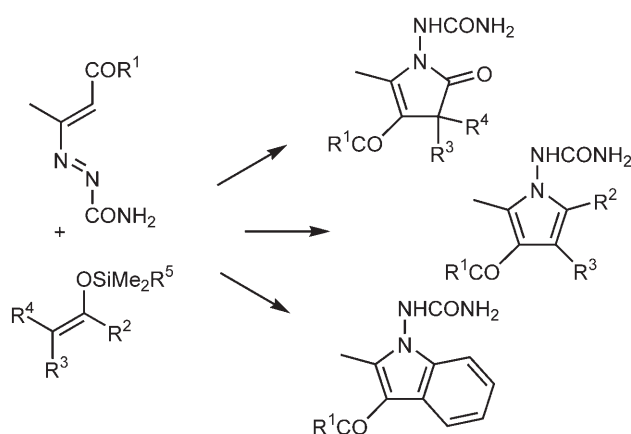
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*Adv. Synth. Catal.* **2007**, 349, 907–915

Orazio A. Attanasi, Gianfranco Favi, Paolino Filippone,\*  
Samuele Lillini, Fabio Mantellini, Domenico Spinelli,\*  
Marco Stenta

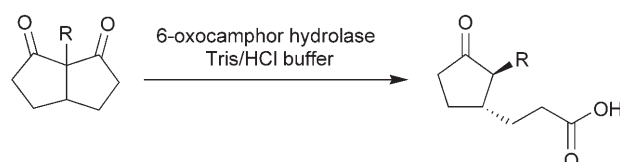


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Desymmetrisations of 1-Alkylbicyclo[3.3.0]octane-2,8-diones by Enzymatic Retro-Claisen Reaction Yield Optically Enriched 2,3-Substituted Cyclopentanones

*Adv. Synth. Catal.* **2007**, 349, 916–924

Cheryl L. Hill, Chandra S. Verma, Gideon Grogan\*



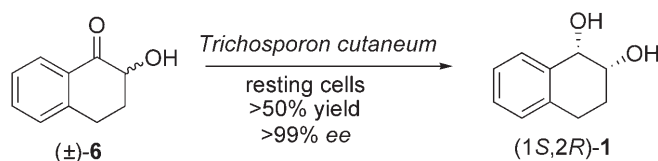
R = Me, Et, Allyl,  
prop-2-ynyl, pentyl


up to 86% *de*;  
95% *ee*

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- 925** Studies of the Deracemization of ( $\pm$ )-2-Hydroxy-1-tetralone by *Trichosporon cutaneum*

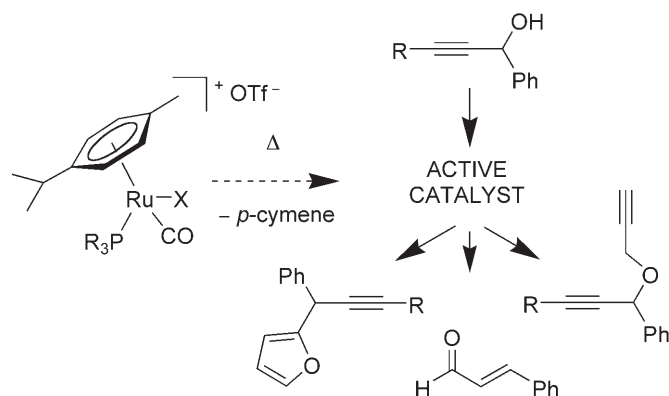
*Adv. Synth. Catal.* **2007**, 349, 925–932



 Inês Lunardi, Tarcila Cazetta, Gelson J. A. Conceição,  
Paulo J. S. Moran, J. Augusto R. Rodrigues\*

- ### 933 Activation of Mononuclear Arene Ruthenium Complexes for Catalytic Propargylation Directly with Propargyl Alcohols

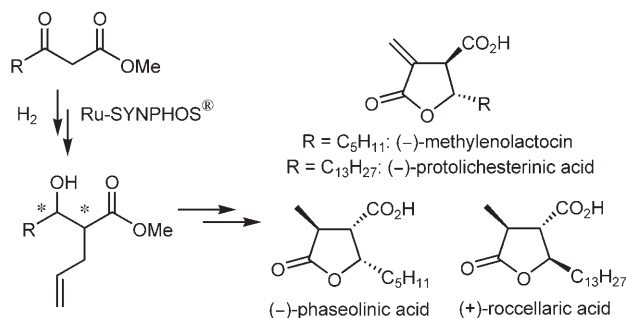
*Adv. Synth. Catal.* **2007**, 349, 933–942

 Emilio Bustelo, Pierre H. Dixneuf\*

- 943** General Enantioselective Synthesis of Butyrolactone Natural Products *via* Ruthenium-SYNPHOS®-Catalyzed Hydrogenation Reactions

*Adv. Synth. Catal.* **2007**, 349, 943–950

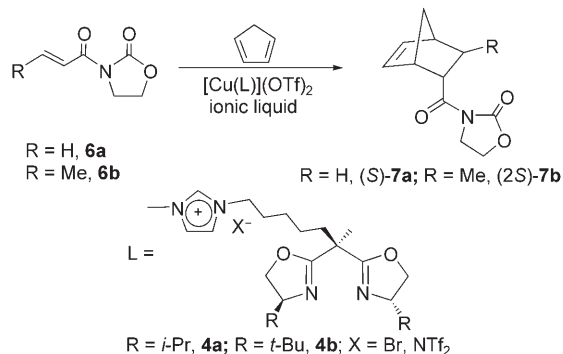
Delphine Blanc, Jonathan Madec, Florence Popowycyk,  
Tahar Ayad, Phannarath Phansavath,\*  
Virginie Ratovelomanana-Vidal, Jean-Pierre Genêt\*



- 951** Recyclable Copper Catalysts Based on Imidazolium-Tagged Bis(oxazolines): A Marked Enhancement in Rate and Enantioselectivity for Diels–Alder Reactions in Ionic Liquid


*Adv. Synth. Catal.* **2007**, 349, 951–963

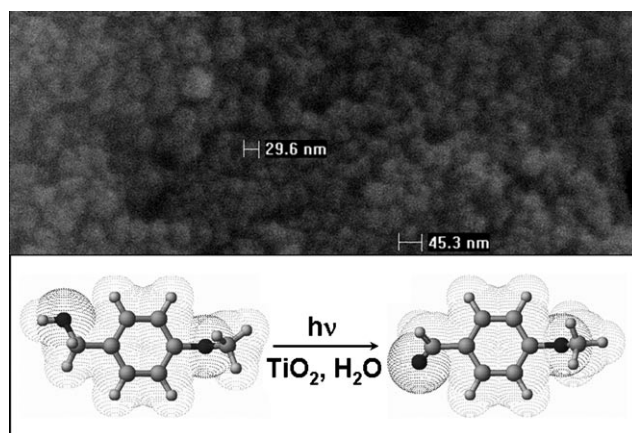
Simon Doherty,\* Peter Goodrich, Christopher Hardacre,\*  
Julian G. Knight,\* Mimi T. Nguyen, Vasile I. Pârvulescu,  
Cristina Paun



Photocatalytic Selective Oxidation of 4-Methoxybenzyl Alcohol to Aldehyde in Aqueous Suspension of Home-Prepared Titanium Dioxide Catalyst

*Adv. Synth. Catal.* **2007**, 349, 964–970

 Giovanni Palmisano, Sedat Yurdakal, Vincenzo Augugliaro, Vittorio Loddò, Leonardo Palmisano\*

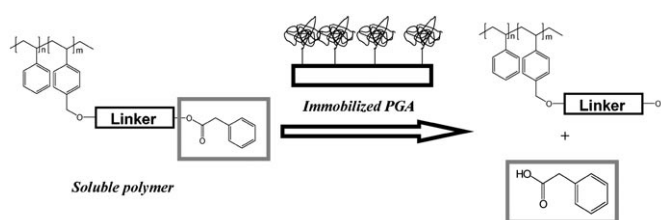


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Efficient Biocatalytic Cleavage and Recovery of Organic Substrates Supported on Soluble Polymers

*Adv. Synth. Catal.* **2007**, 349, 971–978

 Dario Pasini,\* Marco Filippini, Ilaria Pianetti, Massimo Pregnotato\*

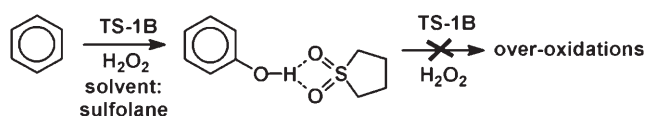


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Oxidation of Benzene to Phenol with Hydrogen Peroxide Catalyzed by a Modified Titanium Silicalite (TS-1B)

*Adv. Synth. Catal.* **2007**, 349, 979–986


Daniele Bianchi,\* Luigi Balducci, Rossella Bortolo, Rino D'Aloisio, Marco Ricci, Guido Spanò, Roberto Tassinari, Cristina Tonini, Raffaele Ungarelli

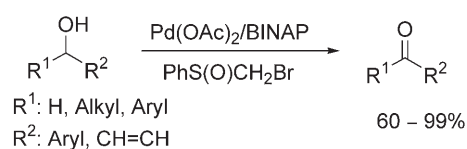


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Anaerobic Palladium-Catalyzed Chemoselective Oxidation of Allylic and Benzylic Alcohols with  $\alpha$ -Bromo Sulfoxide as a Co-oxidant

*Adv. Synth. Catal.* **2007**, 349, 987–991

 Nuria Rodríguez, Mercedes Medio-Simón, Gregorio Asensio\*



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\*Author to whom correspondence should be addressed.