

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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2006, 348, 4 + 5, Pages 393 – 596

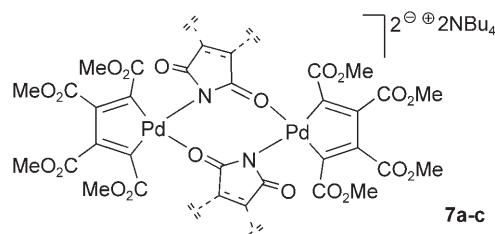
Issue 3/2006 was published online on February 13, 2006

COMMUNICATIONS

Air-Stable, Phosphine-Free Anionic Palladacyclopentadienyl Catalysts: Remarkable Halide and Pseudohalide Effects in Stille Coupling

Adv. Synth. Catal. **2006**, 348, 405 – 412

Catherine M. Crawforth, Ian J. S. Fairlamb,* Anant R. Kapdi, José Luis Serrano, Richard J. K. Taylor, Gregorio Sanchez

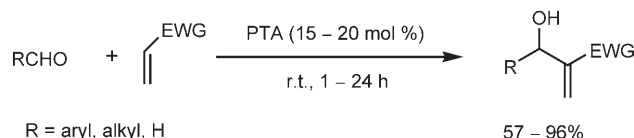


405

The First Air-Stable and Efficient Nucleophilic Trialkylphosphine Organocatalyst for the Baylis–Hillman Reaction

Adv. Synth. Catal. **2006**, 348, 413 – 417

Zhengrong He, Xiaofang Tang, Yaoming Chen, Zhengjie He*



R = aryl, alkyl, H

EWG = CO₂Et, CO₂Bu-*n*, COMe

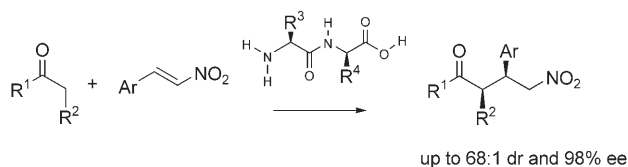
PTA = 1,3,5-triaza-7-phosphaadamantane

57 – 96%

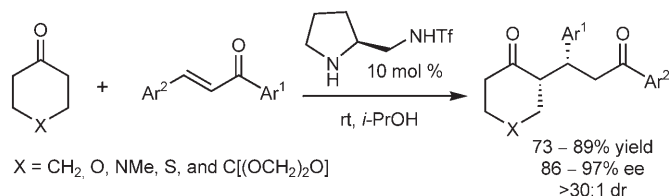
413

418 Small Peptide-Catalyzed Enantioselective Addition of Ketones to Nitroolefins*Adv. Synth. Catal.* **2006**, 348, 418–424

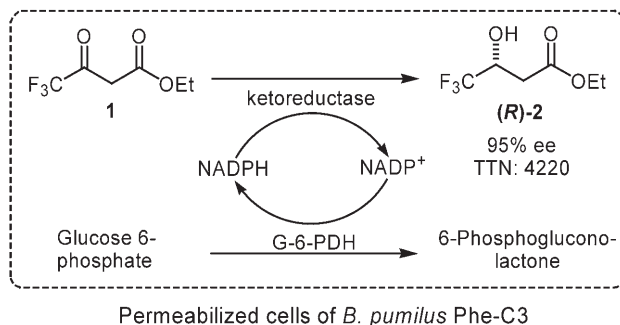
Yongmei Xu, Weibiao Zou, Henrik Sundén, Ismail Ibrahim, Armando Córdoba*

**425** Highly Enantioselective Organocatalytic Michael Addition Reactions of Ketones with Chalcones*Adv. Synth. Catal.* **2006**, 348, 425–428

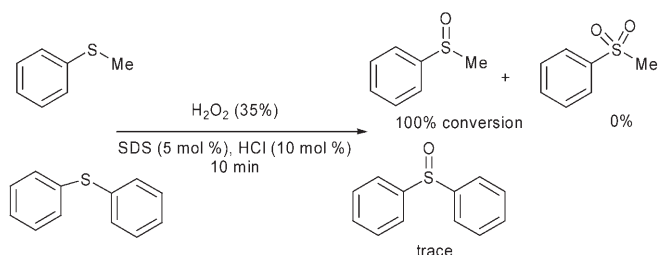
Jian Wang, Hao Li, Liansuo Zu, Wei Wang*

**429** Efficient NADPH Recycling in Enantioselective Bioreduction of a Ketone with Permeabilized Cells of a Microorganism Containing a Ketoreductase and a Glucose 6-Phosphate Dehydrogenase*Adv. Synth. Catal.* **2006**, 348, 429–433

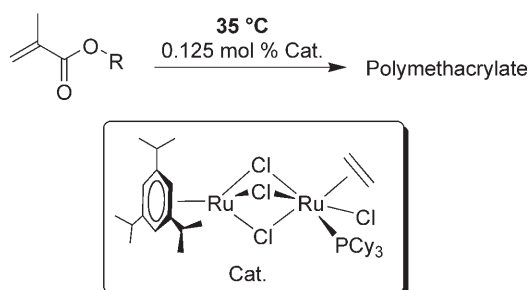
Jie Zhang, Bernard Witholt, Zhi Li*

**434** Metal-Free Chemoselective Oxidation of Sulfides to Sulfoxides by Hydrogen Peroxide Catalyzed by *in situ* Generated Dodecyl Hydrogen Sulfate in the Absence of Organic Co-Solvents*Adv. Synth. Catal.* **2006**, 348, 434–438

H. Firouzabadi,* N. Iranpoor,* A. A. Jafari, E. Riazmontazer

**439** A Bimetallic Ruthenium Complex as a Catalyst Precursor for the Atom Transfer Radical Polymerization of Methacrylates at Ambient Temperature*Adv. Synth. Catal.* **2006**, 348, 439–442

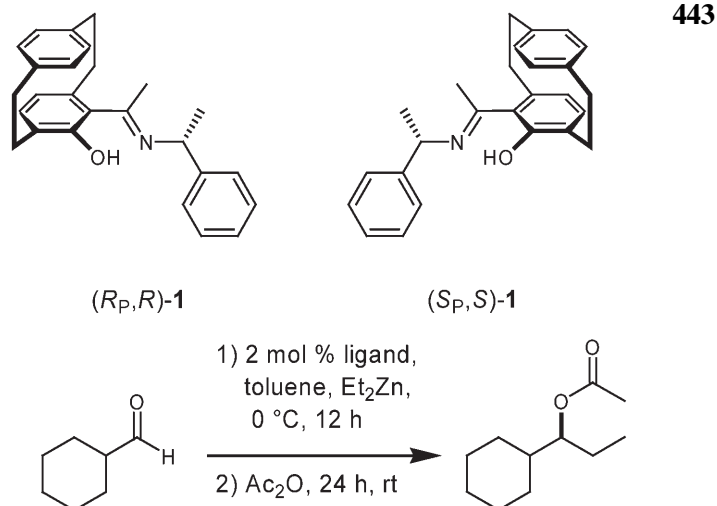
Michel Haas, Euro Solari, Quoc T. Nguyen, Sébastien Gautier, Rosario Scopelliti, Kay Severin*



Planar- and Central-Chiral *N,O*-[2.2]Paracyclophane
Ligands: Non-Linear-Like Effects and Activity

Adv. Synth. Catal. **2006**, 348, 443–448

Frank Lauterwasser, Sylvia Vanderheiden, Stefan Bräse*

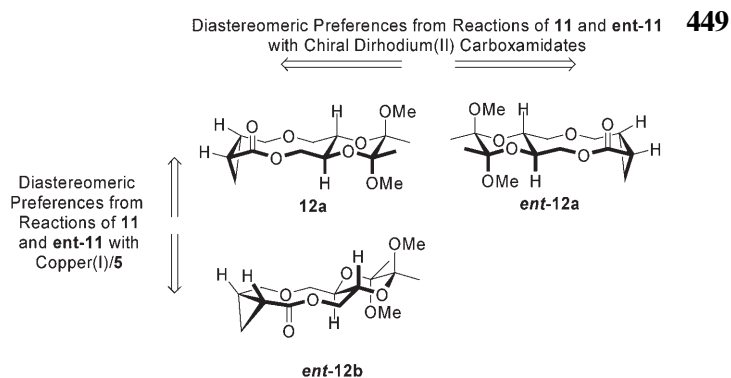


FULL PAPERS

Substrate *versus* Catalyst Control of Stereoselectivity in the
Cyclopropanation of a Carbon-Carbon Double Bond Linked
to the Reactant Diazoacetate through a Chiral Linker

Adv. Synth. Catal. **2006**, 348, 449–455

Thomas M. Weathers Jr., Michael P. Doyle,* Michael D.
Carducci

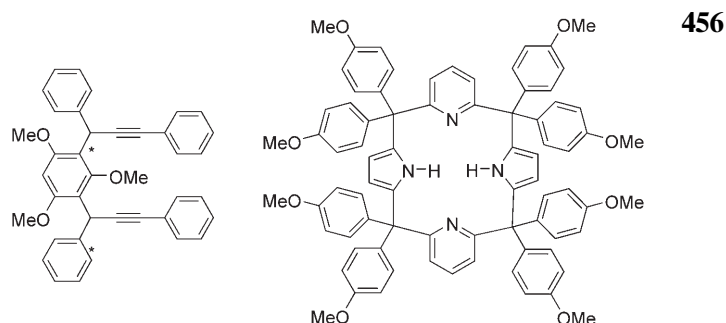


Alkylation of Arenes with Benzylic and Propargylic Alcohols
– Classical *versus* Fancy Catalysts

Adv. Synth. Catal. **2006**, 348, 456–462



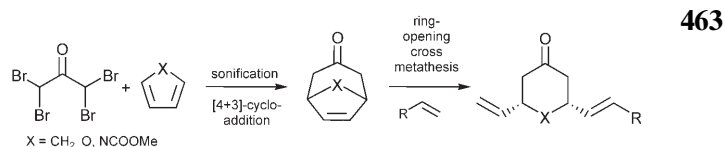
Jianhui Liu, Enrico Muth, Ulrich Flörke, Gerald Henkel,
Klaus Merz, Janelle Sauvageau, Erik Schwake, Gerald
Dyker*



Facile Synthesis and Ring-Opening Cross Metathesis of
Carbo- and Heterocyclic Bicyclo[3.2.1]oct-6-en-3-ones Using
Gaseous Olefinic Reaction Partners

Adv. Synth. Catal. **2006**, 348, 463–470

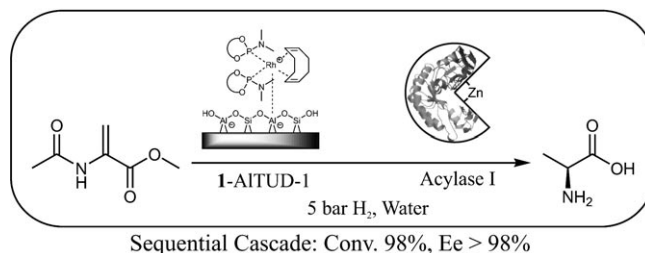
Marko D. Mihovilovic,* Birgit Grötzl, Wolfgang Kandioller,
Radka Snajdrova, Adél Muskotál, Dario A. Bianchi, Peter
Stanetty



- 471** A One-Pot Enantioselective Chemo-Enzymatic Synthesis of Amino Acids in Water

Adv. Synth. Catal. **2006**, 348, 471–475

Chrétien Simons, Ulf Hanefeld, Isabel W. C. E. Arends, Thomas Maschmeyer, Roger A. Sheldon*

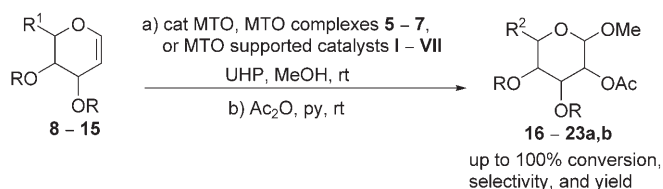


- 476** Methyltrioxorhenium-Catalyzed Epoxidation-Methanolysis of Glycols under Homogeneous and Heterogeneous Conditions

Adv. Synth. Catal. **2006**, 348, 476–486



Andrea Goti,* Francesca Cardona, Gianluca Soldaini, Claudia Crestini, Cinzia Fiani, Raffaele Saladino*

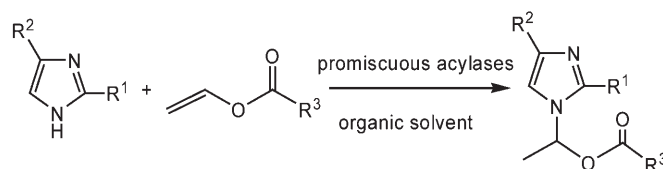


- 487** Promiscuous Acylases-Catalyzed Markovnikov Addition of N-Heterocycles to Vinyl Esters in Organic Media

Adv. Synth. Catal. **2006**, 348, 487–492



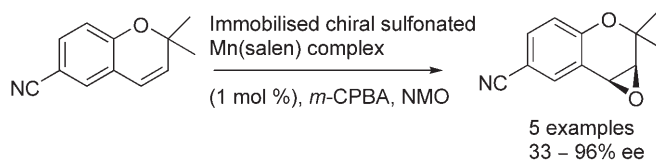
Wei-Bo Wu, Jian-Ming Xu, Qi Wu, De-Shui Lv, Xian-Fu Lin*



- 493** Catalytic Asymmetric Epoxidation of Unfunctionalised Olefins using Silica, LDH and Resin-Supported Sulfonato-Mn(salen) Complex

Adv. Synth. Catal. **2006**, 348, 493–498

B. M. Choudary,* Thekkathu Ramani, H. Maheswaran,* Leon Prashant, K. V. S. Ranganath, K. Vijay Kumar

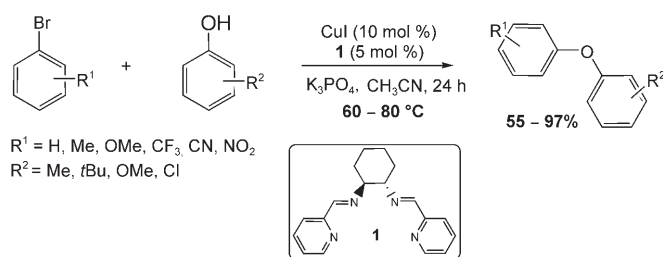


- 499** Mild Conditions for Copper-Catalyzed Coupling Reaction of Phenols and Aryl Iodides and Bromides

Adv. Synth. Catal. **2006**, 348, 499–505



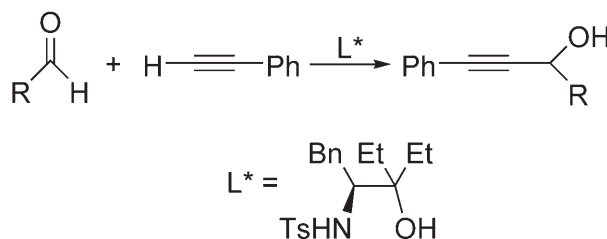
Armelle Ouali, Jean-Francis Spindler, Henri-Jean Cristau, Marc Taillefer*



- 506** Asymmetric Addition of Phenylacetylene to Aldehydes Catalyzed by β -Sulfonamide Alcohol-Titanium Complex

Adv. Synth. Catal. **2006**, 348, 506–514

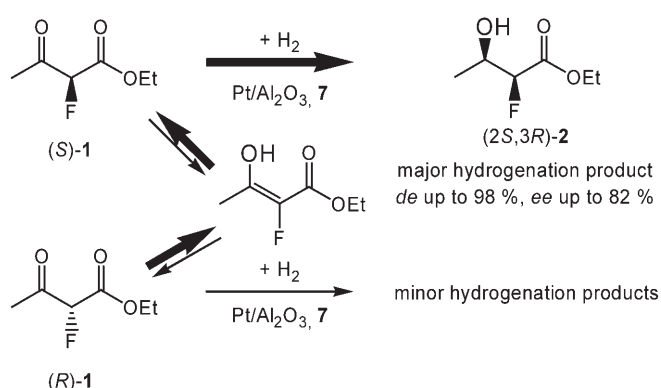
Zhaoqing Xu, Li Lin, Jiangke Xu, Wenjin Yan, Rui Wang*



Dynamic Kinetic Resolution over *Cinchona*-Modified Platinum Catalyst: Hydrogenation of Racemic Ethyl 2-Fluoroacetoacetate

Adv. Synth. Catal. **2006**, 348, 515–522

Kornél Szőri, György Szöllősi,* Mihály Bartók

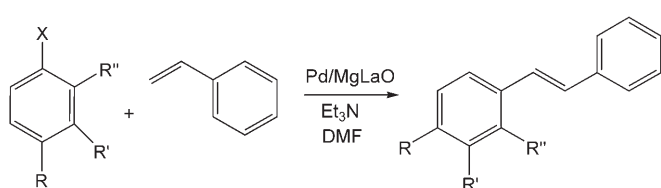


515

Palladium/Magnesium-Lanthanum Mixed Oxide Catalyst in the Heck Reaction

Adv. Synth. Catal. **2006**, 348, 523–530

Agnieszka Cwik, Zoltán Hell,* François Figueras



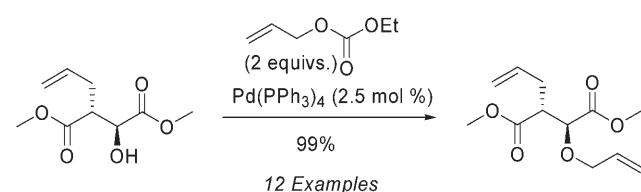
523

Palladium-Catalyzed *O*-Allylation of α -Hydroxy Carbonyl Compounds

Adv. Synth. Catal. **2006**, 348, 531–537



Bernd Schmidt,* Stefan Nave



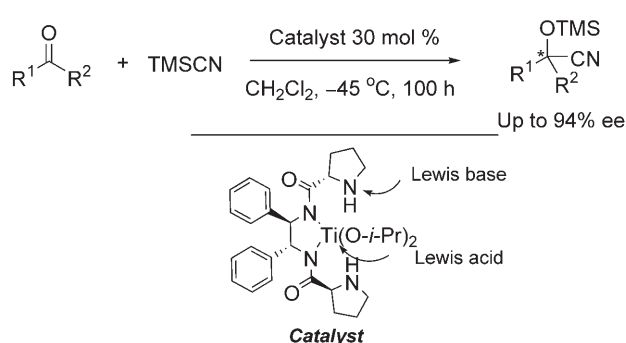
531

Enantioselective Cyanosilylation of Ketones Catalyzed by a Nitrogen-Containing Bifunctional Catalyst

Adv. Synth. Catal. **2006**, 348, 538–544



Yan Xiong, Xiao Huang, Shaohua Gou, Jinglun Huang, Yuehong Wen, Xiaoming Feng*



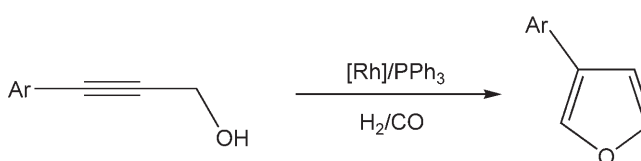
538

Synthesis of 3-Substituted Furans by Hydroformylation

Adv. Synth. Catal. **2006**, 348, 545–550



Perli Nanayakkara, Howard Alper*



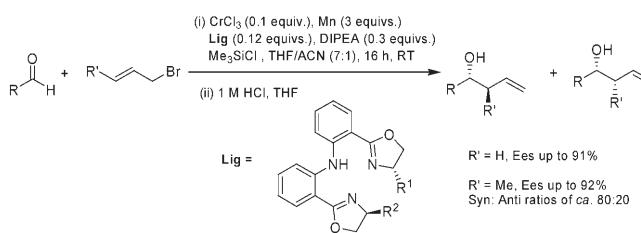
545

Application of Tridentate Bis(oxazoline) Ligands in Catalytic Asymmetric Nozaki–Hiyama Allylation and Crotylation: An Example of High Enantioselection with a Non-Symmetric Bis(oxazoline) Ligand

Adv. Synth. Catal. **2006**, 348, 551–558



Helen A. McManus, Pier Giorgio Cozzi, Patrick J. Guiry*

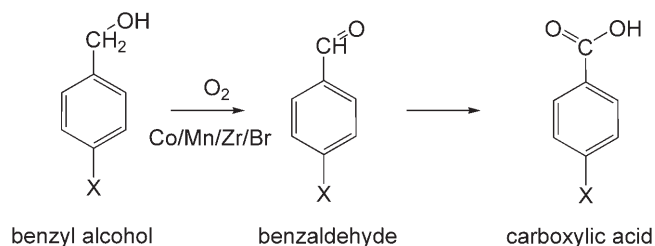


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- 559** The High Yield Synthesis of Benzaldehydes from Benzylic Alcohols using Homogeneously Catalyzed Aerobic Oxidation in Acetic Acid

Adv. Synth. Catal. **2006**, 348, 559–568

Walt Partenheimer

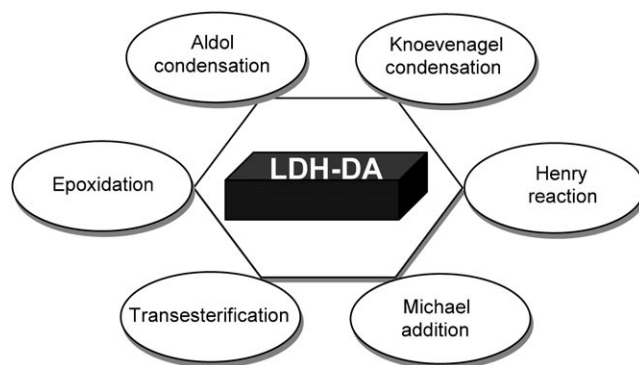


- 569** Layered Double Hydroxides-Supported Diisopropylamide: Synthesis, Characterization and Application in Organic Reactions

Adv. Synth. Catal. **2006**, 348, 569–578



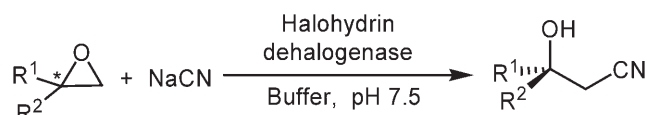
M. Lakshmi Kantam,* A. Ravindra, Ch. Venkat Reddy, B. Sreedhar, B. M. Choudary



- 579** Enantioselective Ring Opening of Epoxides with Cyanide Catalysed by Halohydrin Dehalogenases: A New Approach to Non-Racemic β -Hydroxy Nitriles

Adv. Synth. Catal. **2006**, 348, 579–585

Maja Majerić Elenkov, Bernhard Hauer, Dick B. Janssen*

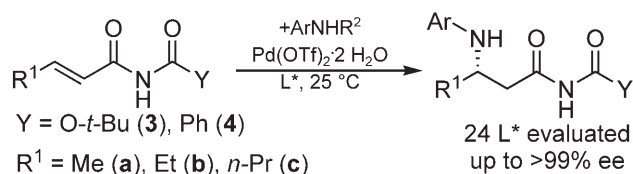


UPDATE

- 587** Enabling Ligand Screening for Palladium-Catalysed Enantioselective Aza-Michael Addition Reactions

Adv. Synth. Catal. **2006**, 348, 587–592

Pim Huat Phua, Andrew J. P. White, Johannes G. de Vries, King Kuok (Mimi) Hii*



BOOK REVIEW

- 593** Quaternary Stereocenters – Challenges and Solutions for Organic Synthesis

Edited by J. Christoffers, A. Baro

Adv. Synth. Catal. **2006**, 348, 593

Till Opatz



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