

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)

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2008, 350, 10, Pages 1429–1644

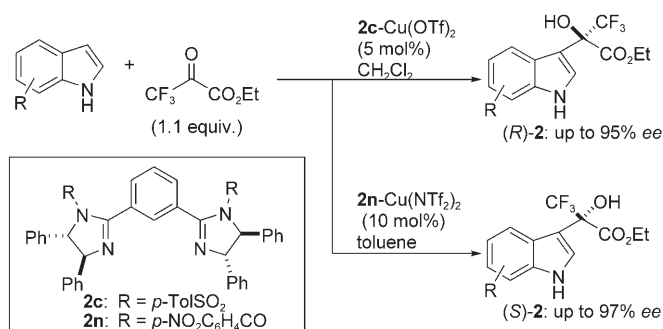
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COMMUNICATIONS

Novel Enantiocomplementary C_2 -Symmetric Chiral Bis(imidazoline) Ligands: Highly Enantioselective Friedel–Crafts Alkylation of Indoles with Ethyl 3,3,3-Trifluoropropionate

Adv. Synth. Catal. **2008**, 350, 1443–1448

Shuichi Nakamura,* Kengo Hyodo, Yuko Nakamura, Norio Shibata, Takeshi Toru*

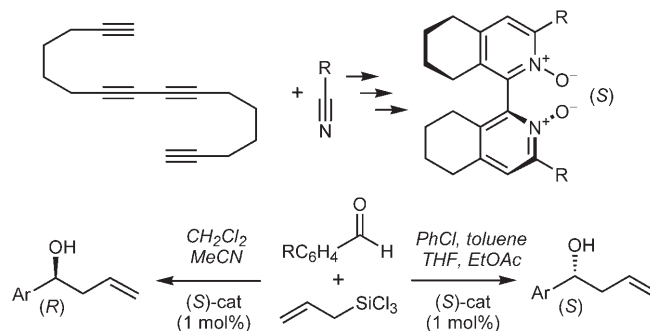


1443

New Pathway to C_2 -Symmetric Atropisomeric Bipyridine N,N' -Dioxides and Solvent Effect in Enantioselective Allylation of Aldehydes

Adv. Synth. Catal. **2008**, 350, 1449–1456


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

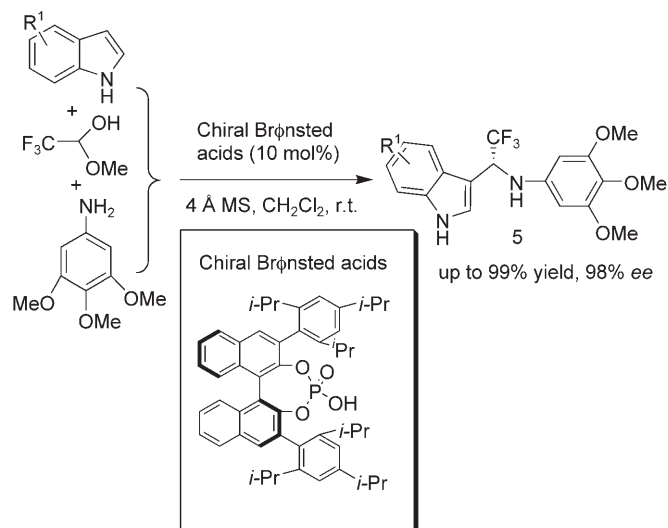


1449

1457 Chiral Brønsted Acid-Mediated Enantioselective Organocatalytic Three-Component Reaction for the Construction of Trifluoromethyl-Containing Molecules


Adv. Synth. Catal. **2008**, 350, 1457–1463

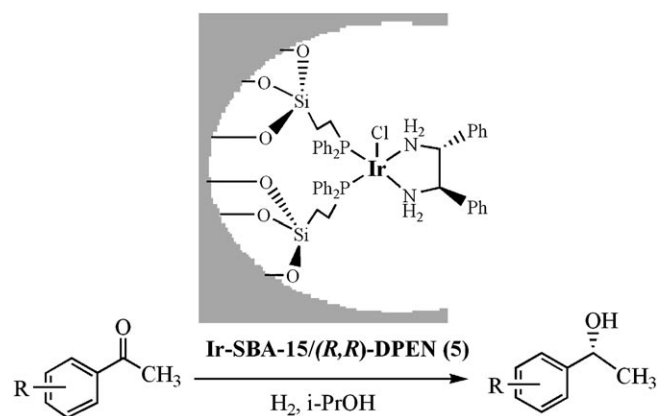
 Guang-Wu Zhang, Lian Wang, Jing Nie, Jun-An Ma*



1464 Enantioselective Hydrogenation of Aromatic Ketones Catalyzed by a Mesoporous Silica-Supported Iridium Catalyst

Adv. Synth. Catal. **2008**, 350, 1464–1468

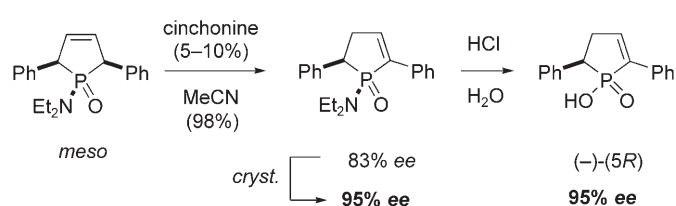
 Guohua Liu,* Mei Yao, Jianyao Wang, Xiaoquan Lu, Mouming Liu, Fang Zhang, Hexing Li*



1469 Enantioselective Synthesis of Phospholenes *via* Asymmetric Organocatalytic Alkene Isomerization

Adv. Synth. Catal. **2008**, 350, 1469–1473

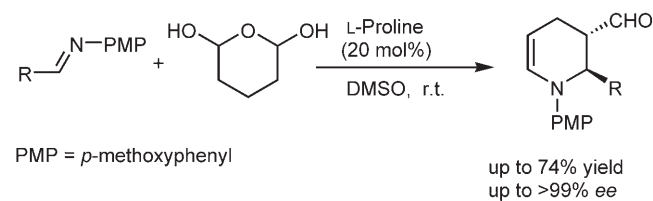
 Lukas Hintermann,* Marco Schmitz



1474 Proline-Mediated Enantioselective Construction of Tetrahydropyridines *via* a Cascade Mannich-Type/Intramolecular Cyclization Reaction

Adv. Synth. Catal. **2008**, 350, 1474–1478

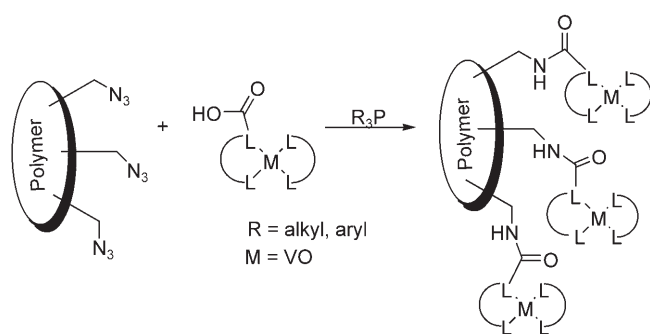
 Rong-Gang Han, Yao Wang, Yu-Ye Li, Peng-Fei Xu*



An Efficient Approach for Immobilizing the Oxo-Vanadium Schiff Base onto Polymer Supports using Staudinger Ligation

Adv. Synth. Catal. **2008**, 350, 1479–1483

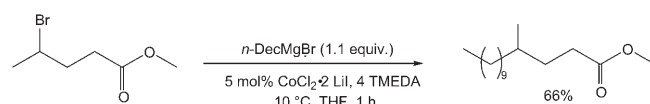
Suman L. Jain,* Bir Sain



1479

Cobalt-Catalyzed Cross-Coupling Reaction between Functionalized Primary and Secondary Alkyl Halides and Aliphatic Grignard Reagents

Adv. Synth. Catal. **2008**, 350, 1484–1488

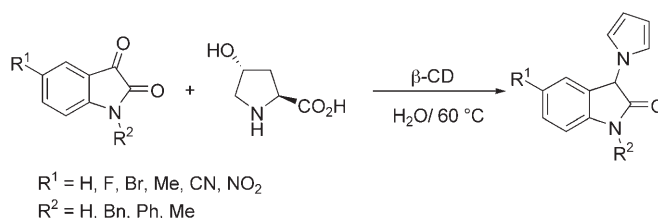


1484

G rard Cahiez,* Christophe Chaboche, Christophe Duplais, Arianna Giuliani, Alban Moyeux

Novel Aqueous Phase Supramolecular Synthesis of 3-Pyrrolylindolin-2-ones and Pyrrolylindeno[1,2-*b*]-quinoxalines

Adv. Synth. Catal. **2008**, 350, 1489–1492

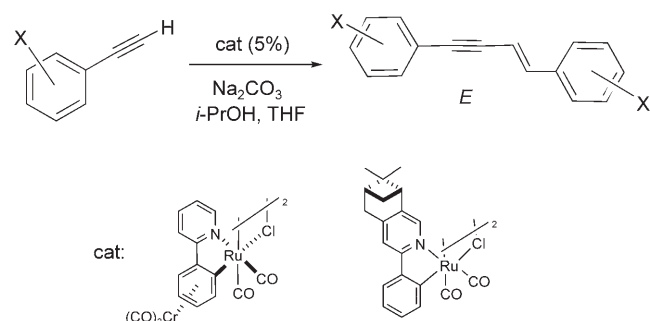


1489

R. Sridhar, B. Srinivas, V. Pavan Kumar, V. Prakash Reddy, A. Vijay Kumar, K. Rama Rao*

Head-to-Head Homo-Coupling of Arylethynes Catalysed by (Dicarbonyl)ruthenium Chloride Metallacycles: Selective Synthesis of (*E*)-1,4-Diarylbut-1-en-3-yne

Adv. Synth. Catal. **2008**, 350, 1493–1496

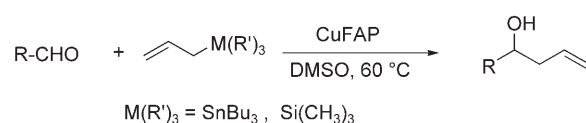


1493

Akram Hijazi, Ksenia Parkhomenko, Jean-Pierre Djukic,* Atika Chemmi, Michel Pfeffer

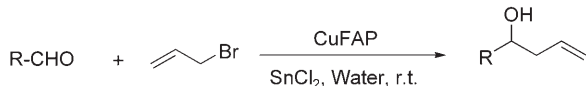
Mild and Efficient Allylation of Aldehydes by using Copper Fluorapatite as Catalyst

Adv. Synth. Catal. **2008**, 350, 1497–1502



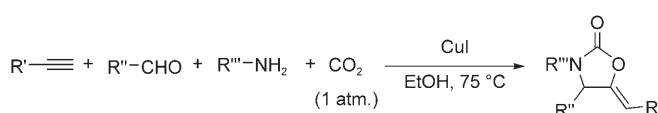
1497

M. Lakshmi Kantam,* G. T. Venkanna, K. B. Shiva Kumar, V. Balasubrahmanyam, G. Venkateswarlu, B. Sreedhar



Copper-Catalyzed Four-Component Coupling between Aldehydes, Amines, Alkynes, and Carbon Dioxide

Adv. Synth. Catal. **2008**, 350, 1503–1506


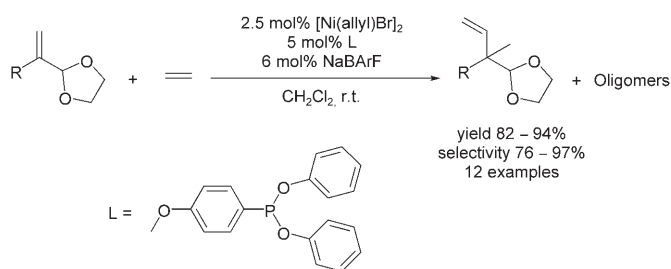


1503

Woo-Jin Yoo, Chao-Jun Li*

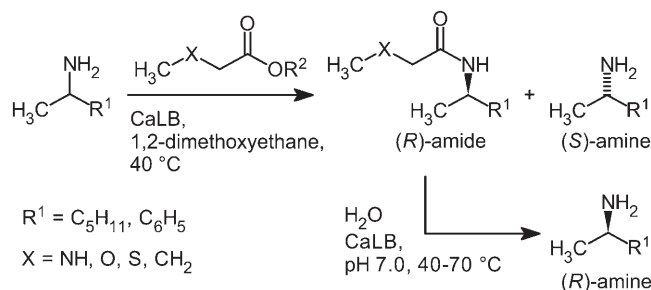
1507 Nickel-Catalyzed Highly Selective Hydrovinylation of α -Ketals of Vinylarenes

Adv. Synth. Catal. **2008**, 350, 1507–1510


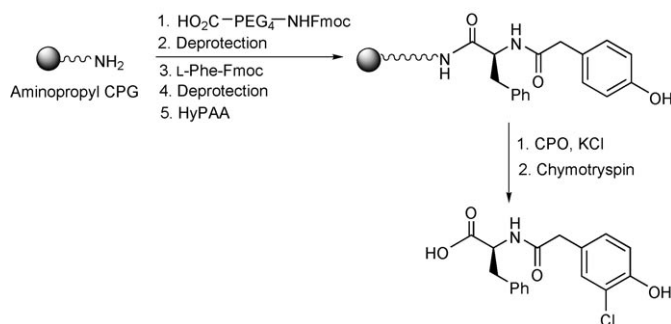
 Qi Zhang, Shou-Fei Zhu, Xiang-Chen Qiao, Li-Xin Wang, Qi-Lin Zhou*

FULL PAPERS
1511 Fully Enzymatic Resolution of Chiral Amines: Acylation and Deacylation in the Presence of *Candida antarctica* Lipase B

Adv. Synth. Catal. **2008**, 350, 1511–1516

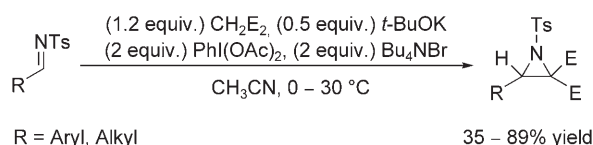
Hilda Ismail, Rute Madeira Lau, Fred van Rantwijk, Roger A. Sheldon*


1517 Expanding the Scope of Biocatalysis: Oxidative Biotransformations on Solid-Supported Substrates


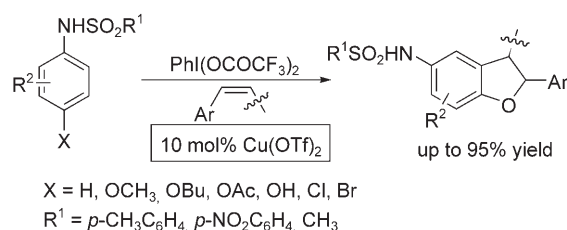
Adv. Synth. Catal. **2008**, 350, 1517–1525

 Sarah J. Brooks, Lydie Coulombel, Disha Ahuja, Douglas S. Clark, Jonathan S. Dordick*

1526 Iodobenzene Diacetate/Tetrabutylammonium Iodide-Induced Aziridination of *N*-Tosylimines with Activated Methylene Compounds under Mild Conditions

Adv. Synth. Catal. **2008**, 350, 1526–1530


 Renhua Fan,* Yang Ye

1531 One-Pot Oxidative Heteroannulations of *N*-Sulfonylanilines with Styrenes for the Construction of 5-Aminocoumaran Derivatives

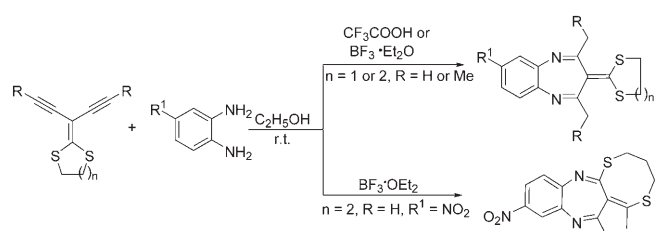
Adv. Synth. Catal. **2008**, 350, 1531–1536

 Renhua Fan,* Weixun Li, Yang Ye, Linfei Wang


Proton-Promoted Hydroamination of 3-Dialkylthiomethylene-1,4-pentadiynes with *o*-Phenylenediamines: A Facile Route to Benzo[*b*][1,4]diazepines

Adv. Synth. Catal. **2008**, 350, 1537–1543


 Yu-Long Zhao,* Da-Zhi Li, Xiao-Dan Han, Li Chen, Qun Liu*

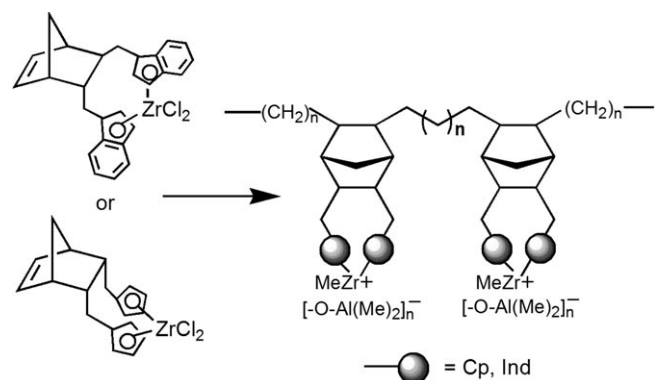


1537

Self-Immobilizing Precatalysts: Norbornene-Bridged Zirconium *ansa*-Metallocenes

Adv. Synth. Catal. **2008**, 350, 1544–1556


 Eleonora Polo,* Fabrizio Forlini, Valerio Bertolasi, Antonella Caterina Boccia, Maria Carmela Sacchi

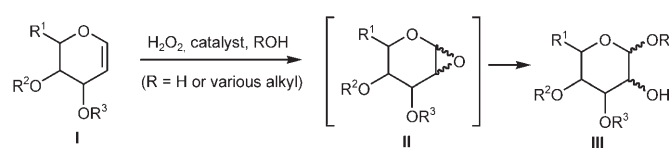


1544

Tandem Epoxidation-Alcoholysis or Epoxidation-Hydrolysis of Glycols Catalyzed by Titanium(IV) Isopropoxide or Venturello's Phosphotungstate Complex

Adv. Synth. Catal. **2008**, 350, 1557–1568


 Pieter Levecque, David W. Gammon,* Henok Hadgu Kinfe, Pierre Jacobs, Dirk De Vos, Bert Sels*

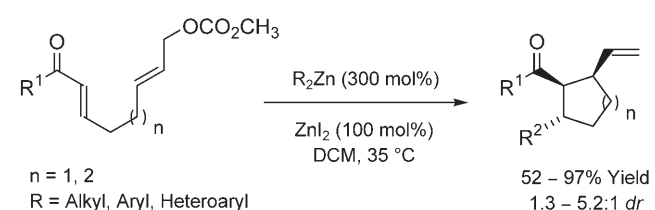


1557

Direct Copper-Free Domino Conjugate Addition-Cycloallylation using Organozinc Reagents

Adv. Synth. Catal. **2008**, 350, 1569–1576


 Venukrishnan Komanduri, Fernando Pedraza, Michael J. Krische*

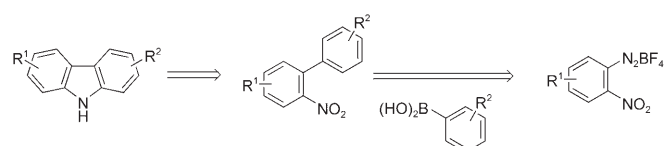


1569

Suzuki–Miyaura Cross-Coupling of 2-Nitroarenediazonium Tetrafluoroborates: Synthesis of Unsymmetrical 2-Nitrobiphenyls and Highly Functionalized Carbazoles

Adv. Synth. Catal. **2008**, 350, 1577–1586


 Jeffrey T. Kuethe,* Karla G. Childers

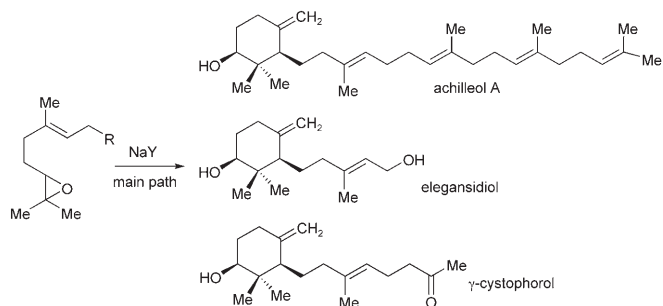


1577

- 1587** Zeolite NaY-Promoted Monocyclization of Epoxy Polyene Terpenes: A Unique Route for the Direct Synthesis of Incompletely Cyclized Naturally Occurring Terpenols

Adv. Synth. Catal. **2008**, 350, 1587–1600

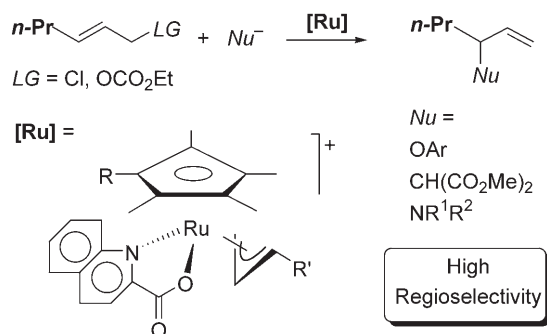
 Constantinos Tsangarakis, Christos Raptis, Elias Arkoudis, Manolis Stratakis*



- 1601** Novel [Ruthenium(substituted-tetramethylcyclopentadiene)-(2-quinolinecarboxylato)(allyl)] Hexafluorophosphate Complexes as Efficient Catalysts for Highly Regioselective Nucleophilic Substitution of Aliphatic Allylic Substrates

Adv. Synth. Catal. **2008**, 350, 1601–1609

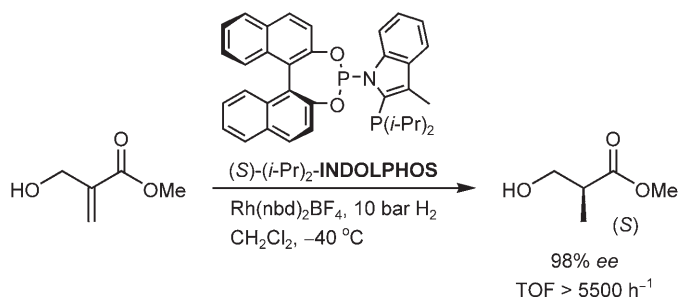
 Hui-Jun Zhang, Bernard Demerseman, Loïc Toupet, Zhenfeng Xi,* Christian Bruneau*



- 1610** Asymmetric Synthesis of the Roche Ester and its Derivatives by Rhodium-INDOLPHOS-Catalyzed Hydrogenation

Adv. Synth. Catal. **2008**, 350, 1610–1614

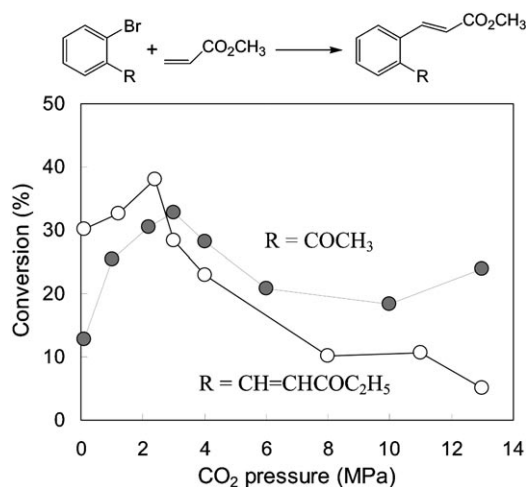
 Jeroen Wassenaar, Mark Kuil, Joost N. H. Reek*



- 1615** Impact of Carbon Dioxide Pressurization on Liquid Phase Organic Reactions: A Case Study on Heck and Diels–Alder Reactions

Adv. Synth. Catal. **2008**, 350, 1615–1625

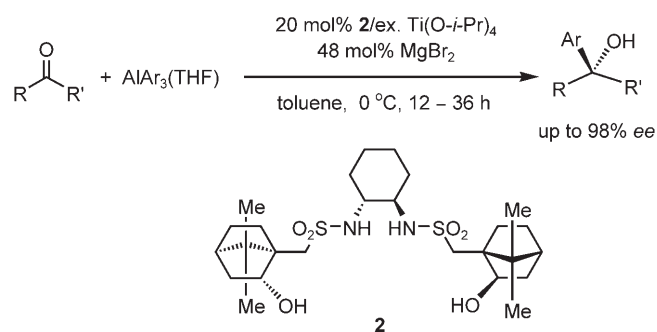
S. Fujita, T. Tanaka, Y. Akiyama, K. Asai, J. Hao, F. Zhao, M. Arai*



A New Aspect of Magnesium Bromide-Promoted Enantioselective Aryl Additions of Triaryl(tetrahydrofuran)-aluminum to Ketones Catalyzed by a Titanium(IV) Catalyst of *trans*-1,2-Bis(hydroxycamphorsulfonylamino)cyclohexane

Adv. Synth. Catal. **2008**, 350, 1626–1634

Chien-An Chen, Kuo-Hui Wu, Han-Mou Gau*



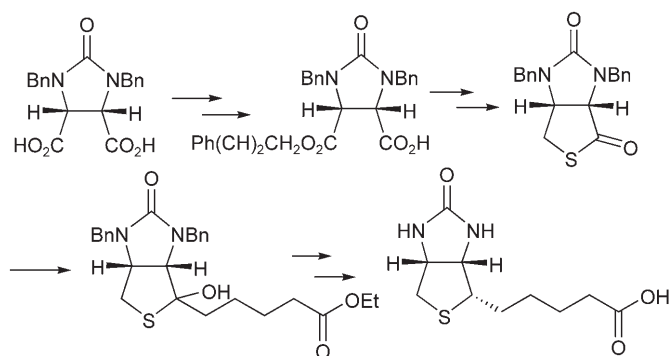
1626

UPDATE

Synthetic Studies on (+)-Biotin, Part 11: Application of *Cinchona* Alkaloid-Mediated Asymmetric Alcoholysis of *meso*-Cyclic Anhydride in the Total Synthesis of (+)-Biotin

Adv. Synth. Catal. **2008**, 350, 1635–1641

Hui-Fang Dai, Wen-Xue Chen, Lei Zhao, Fei Xiong, Hao Sheng, Fen-Er Chen*



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

*Author to whom correspondence should be addressed.