

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*
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2008, 350, 11 + 12, Pages 1645–1908

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July 7, 2008

DEDICATED CLUSTER – COMMENTARY

In Honor of Professor Chi-Huey Wong on the Occasion of
His 60th Birthday

Adv. Synth. Catal. **2008**, 350, 1659–1660

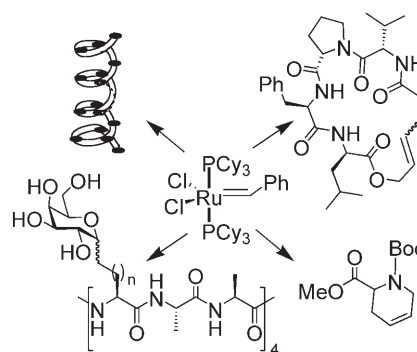
Michael D. Burkart, William A. Greenberg*

DEDICATED CLUSTER – REVIEW

Metathesis in Peptides and Peptidomimetics

Adv. Synth. Catal. **2008**, 350, 1661–1675

Ashraf Brik*

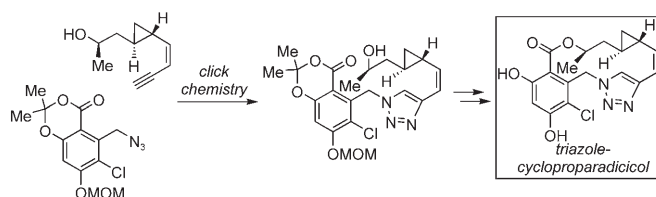


DEDICATED CLUSTER – COMMUNICATIONS

- 1677** Efficient Synthesis of a Novel Resorcyclide as Anticancer Agent Based on Hsp90 Inhibition


Adv. Synth. Catal. **2008**, 350, 1677–1681

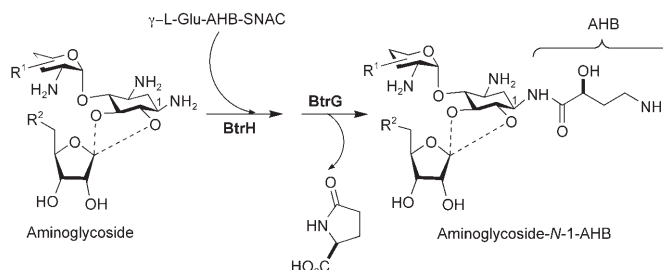
 Xiaoguang Lei, Samuel J. Danishefsky*



- 1682** Combined Chemical-Enzymatic Assembly of Aminoglycoside Derivatives with N-1-AHB Side Chain


Adv. Synth. Catal. **2008**, 350, 1682–1688

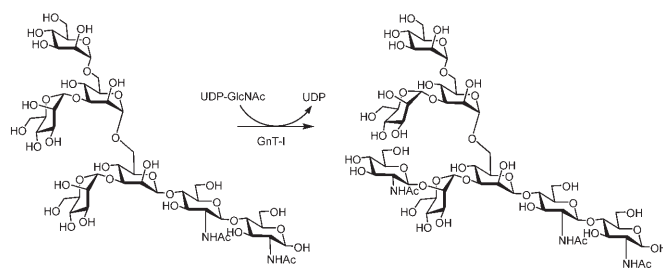
 Igor Nudelman, Lilach Chen, Nicholas M. Llewellyn, El-Habib Sahraoui, Marina Cherniavsky, Jonathan B. Spencer,* Timor Baasov*



- 1689** Enzyme-Catalyzed Synthesis of a Hybrid N-Linked Oligosaccharide using N-Acetylglucosaminyltransferase I

Adv. Synth. Catal. **2008**, 350, 1689–1695

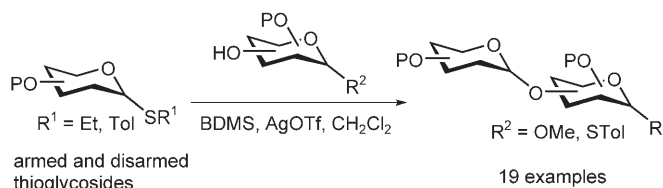
 Rui Chen, Mark A. Pawlicki, Brian S. Hamilton, Thomas J. Tolbert*



- 1696** Bromodimethylsulfonium Bromide-Silver Triflate: A New Powerful Promoter System for the Activation of Thioglycosides

Adv. Synth. Catal. **2008**, 350, 1696–1700

 De-Cai Xiong, Li-He Zhang, Xin-Shan Ye*

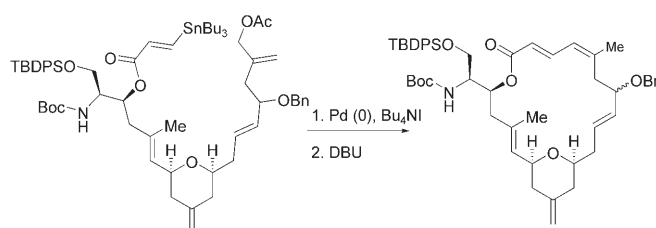


DEDICATED CLUSTER – FULL PAPERS

- 1701** Studies toward the Synthesis of (–)-Zampanolide: Preparation of the Macrocyclic Core


Adv. Synth. Catal. **2008**, 350, 1701–1711

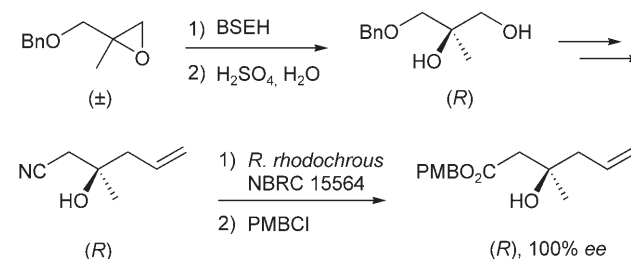
 Dawn M. Troast, Jiayi Yuan, John A. Porco, Jr.*



- 1712** Chemoenzymatic Approach to Enantiomerically Pure (R)-3-Hydroxy-3-methyl-4-pentenoic Acid Ester and Its Application to a Formal Total Synthesis of Taurospongins A


Adv. Synth. Catal. **2008**, 350, 1712–1716

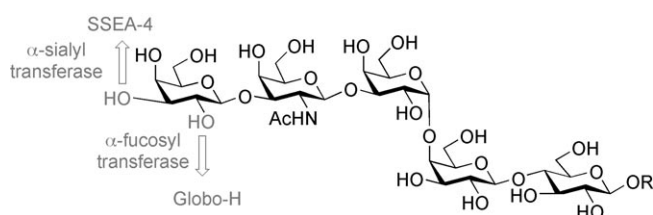
 Aya Fujino, Takeshi Sugai*



Chemoenzymatic Syntheses of Tumor-Associated Carbohydrate Antigen Globo-H and Stage-Specific Embryonic Antigen 4

Adv. Synth. Catal. **2008**, 350, 1717–1728


 Zhen Wang, Michel Gilbert, Hironobu Eguchi, Hai Yu, Jiansong Cheng, Saddam Muthana, Luyuan Zhou, Peng George Wang, Xi Chen, Xuefei Huang*

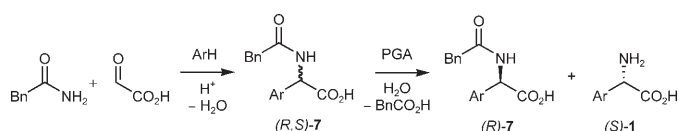


1717

One-Pot, Regioselective Synthesis of Substituted Arylglycines for Kinetic Resolution by Penicillin G Acylase

Adv. Synth. Catal. **2008**, 350, 1729–1735

 Peter Grundmann, Wolf-Dieter Fessner*

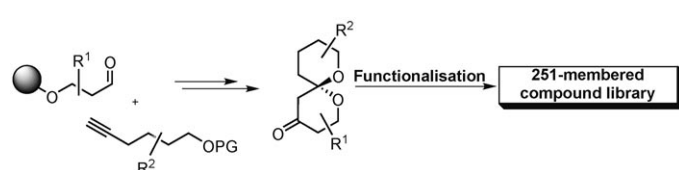


1729

Solid-Phase Synthesis of [5.5]-Spiroketal

Adv. Synth. Catal. **2008**, 350, 1736–1750


 Stefan Sommer, Marc Kühn, Herbert Waldmann*

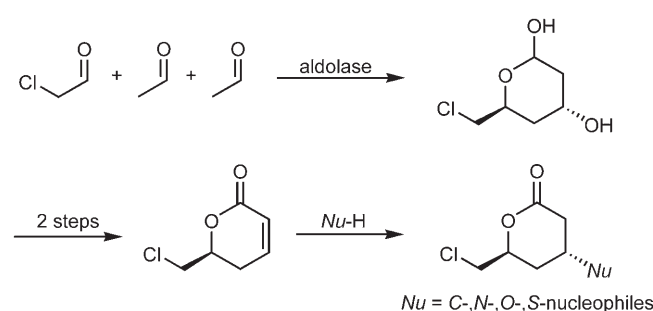


1736

Large-Scale Synthesis of New Pyranoid Building Blocks Based on Aldolase-Catalysed Carbon-Carbon Bond Formation

Adv. Synth. Catal. **2008**, 350, 1751–1759

 Michael Wolberg,* Ben H. N. Dassen, Martin Schürmann, Stefan Jennewein, Marcel G. Wubbolts, Hans E. Schoemaker, Daniel Mink*



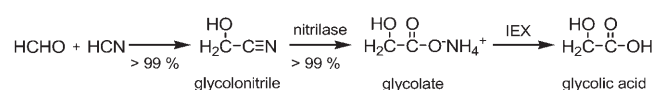
1751

DEDICATED CLUSTER – UPDATE

Optimization of Biocatalyst Specific Activity for Glycolic Acid Production

Adv. Synth. Catal. **2008**, 350, 1761–1769

Arie Ben-Bassat, Alison M. Walls, Matthew A. Plummer, Amy E. Sigmund, William L. Spillan, Robert DiCosimo*



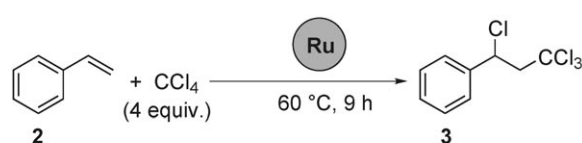
1761

COMMUNICATIONS

Highly Efficient Heterogeneous Aqueous Kharasch Reaction with an Amphiphilic Resin-Supported Ruthenium Catalyst

Adv. Synth. Catal. **2008**, 350, 1771–1775

 Yohei Oe, Yasuhiro Uozumi*




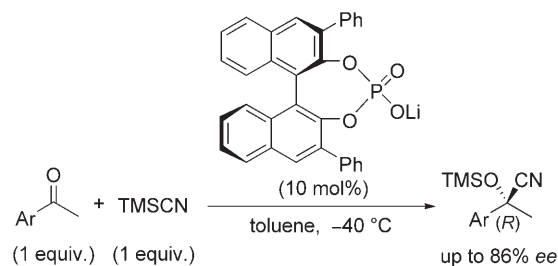
S/C = 2,000, in water; TOF = 1445 h⁻¹ (at initial 15 min)
S/C = 100, in toluene; TOF < 1 (no reaction)

1771

- 1776** Chiral Lithium Salts of Phosphoric Acids as Lewis Acid–Base Conjugate Catalysts for the Enantioselective Cyanosilylation of Ketones

Adv. Synth. Catal. **2008**, 350, 1776–1780

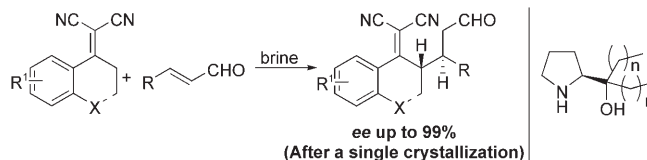
 Manabu Hatano, Takumi Ikeno, Tokihiko Matsumura, Shinobu Torii, Kazuaki Ishihara*



- 1781** Enantioselective Michael Addition of Dicyanoolefins to α,β -Unsaturated Aldehydes in Aqueous Medium

Adv. Synth. Catal. **2008**, 350, 1781–1784

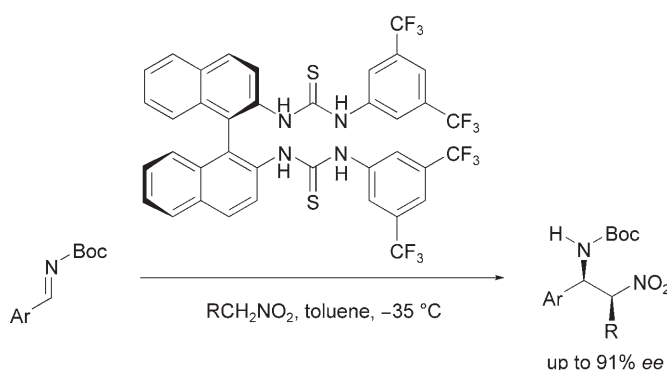
 Jun Lu, Feng Liu, Teck-Peng Loh*



- 1785** A Novel Bis-Thiourea Organocatalyst for the Asymmetric Aza-Henry Reaction

Adv. Synth. Catal. **2008**, 350, 1785–1790

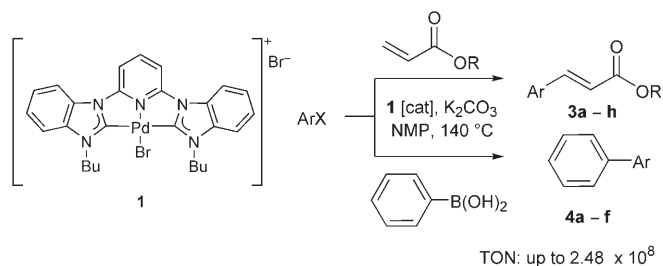
 Constantinos Rampalagos, William D. Wulff*



- 1791** A Novel Pyridine-Bridged Bis-benzimidazolyldene Pincer Palladium Complex: Synthesis and Catalytic Properties


Adv. Synth. Catal. **2008**, 350, 1791–1795

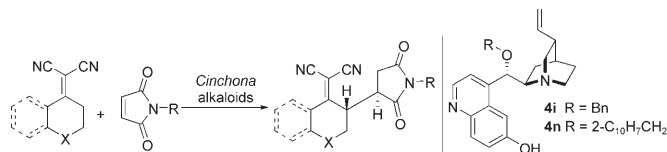
Tao Tu,* Jagadeesh Malineni, Karl Heinz Dötz*



- 1796** Organocatalytic and Enantioselective Direct Vinylogous Michael Addition to Maleimides


Adv. Synth. Catal. **2008**, 350, 1796–1800

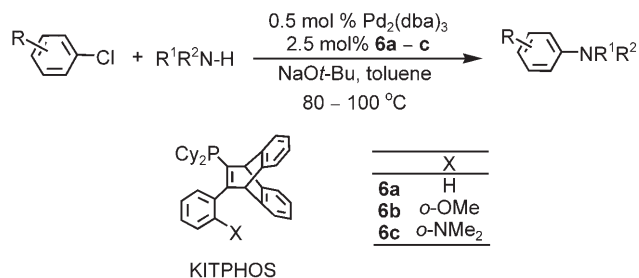
 Jun Lu, Wei-Juan Zhou, Feng Liu, Teck-Peng Loh*



- 1801** Electron-Rich, Bicyclic Biaryl-Like KITPHOS Monophosphines *via* [4+2] Cycloaddition between 1-Alkynylphosphine Oxides and Anthracene: Highly Efficient Ligands for Palladium-Catalysed C–N and C–C Bond Formation

Adv. Synth. Catal. **2008**, 350, 1801–1806


 Simon Doherty,* Julian G. Knight,* Catherine H. Smyth,* Graeme A. Jorgenson

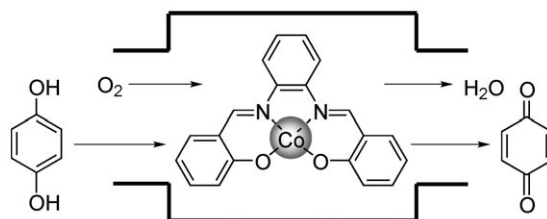


FULL PAPERS

Aerobic Oxidations Catalyzed by Zeolite-Encapsulated Cobalt Salophen

Adv. Synth. Catal. **2008**, 350, 1807–1815

 Mikael Johansson, Byron W. Purse, Osamu Terasaki, Jan-E. Bäckvall*

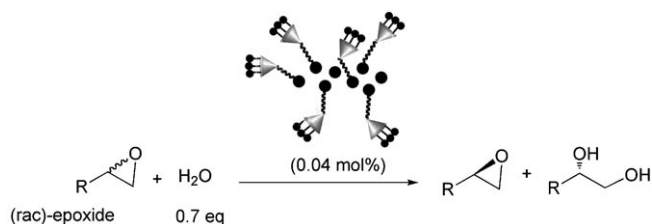


1807

Enhanced Cooperativity in Hydrolytic Kinetic Resolution of Epoxides using Poly(styrene) Resin-Supported Dendronized Co-(Salen) Catalysts

Adv. Synth. Catal. **2008**, 350, 1816–1822


Poorva Goyal, Xiaolai Zheng, Marcus Weck*

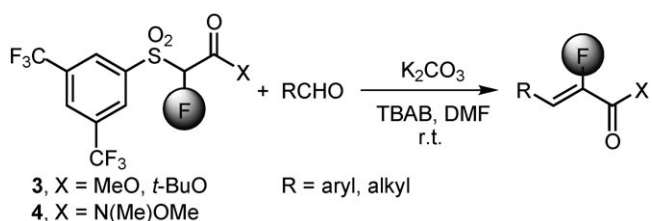


1816

Highly Efficient and Stereoselective Julia–Kocienski Protocol for the Synthesis of α -Fluoro- α,β -unsaturated Esters and Weinreb Amides Employing 3,5-Bis(trifluoromethyl)phenyl (BTFP) Sulfones

Adv. Synth. Catal. **2008**, 350, 1823–1829

 Diego A. Alonso,* Mónica Fuensanta, Enrique Gómez-Bengoa, Carmen Nájera*

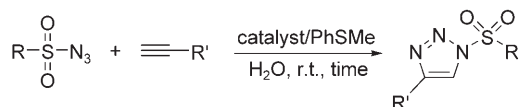


1823

Copper-Catalyzed Cycloaddition of Sulfonyl Azides with Alkynes to Synthesize *N*-Sulfonyltriazoles ‘on Water’ at Room Temperature

Adv. Synth. Catal. **2008**, 350, 1830–1834

 Feng Wang, Hua Fu,* Yuyang Jiang, Yufen Zhao

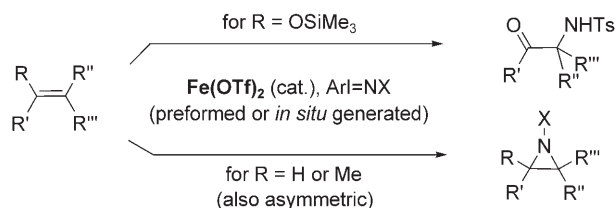


1830

Iron-Catalyzed Aziridination Reactions

Adv. Synth. Catal. **2008**, 350, 1835–1840

Masafumi Nakanishi, Anne-Frederique Salit, Carsten Bolm*

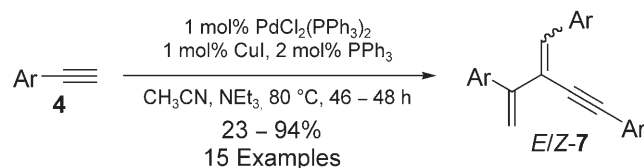


1835

Palladium-Catalyzed Trimerizations of Terminal Arylalkynes: Synthesis of 1,3-Diaryl-2-arylethynyl-1,3-butadienes

Adv. Synth. Catal. **2008**, 350, 1841–1849

 Yao-Ting Wu,* Wei-Chih Lin, Chia-Ju Liu, Chuan-Yi Wu

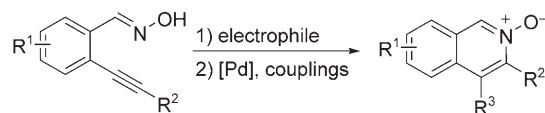


1841

- 1850** Access to Functionalized Isoquinoline *N*-Oxides via Sequential Electrophilic Cyclization/Cross-Coupling Reactions


Adv. Synth. Catal. **2008**, 350, 1850–1854

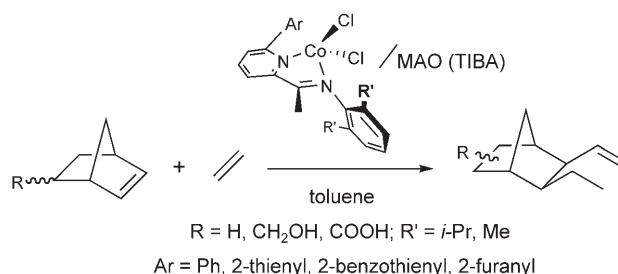
 Qiuping Ding, Jie Wu*



- 1855** New Functionalized Vinyl Monomers by Ethylene-(Functionalized)-Norbornene Hetero-Trimerization Catalyzed by Cobalt(II)-(Imino)pyridine Complexes

Adv. Synth. Catal. **2008**, 350, 1855–1866

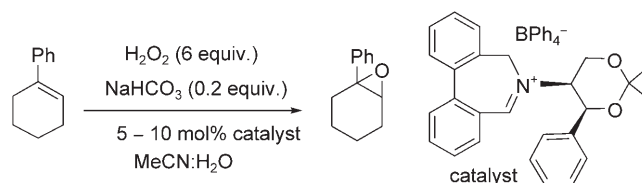
 Alessandro Toti, Giuliano Giambastiani,*
Claudio Bianchini,* Andrea Meli, Lapo Luconi



- 1867** Iminium Salt-Catalysed Asymmetric Epoxidation using Hydrogen Peroxide as Stoichiometric Oxidant


Adv. Synth. Catal. **2008**, 350, 1867–1874

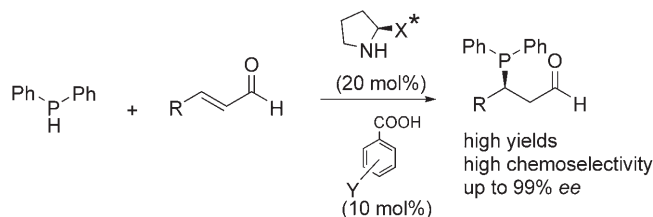
Philip C. Bulman Page,* Phillip Parker, Gerasimos A. Rassias, Benjamin R. Buckley, Donald Bethell



- 1875** Organocatalytic Asymmetric Hydrophosphination of α,β -Unsaturated Aldehydes: Development, Mechanism and DFT Calculations

Adv. Synth. Catal. **2008**, 350, 1875–1884

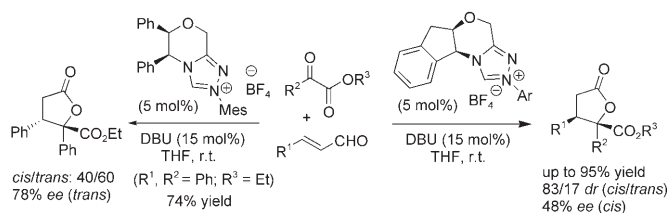
 Ismail Ibrahim, Peter Hammar, Jan Vesely, Ramon Rios, Lars Eriksson, Armando Córdova*



- 1885** Stereoselective Synthesis of γ -Butyrolactones via Organocatalytic Annulations of Enals and Keto Esters


Adv. Synth. Catal. **2008**, 350, 1885–1890

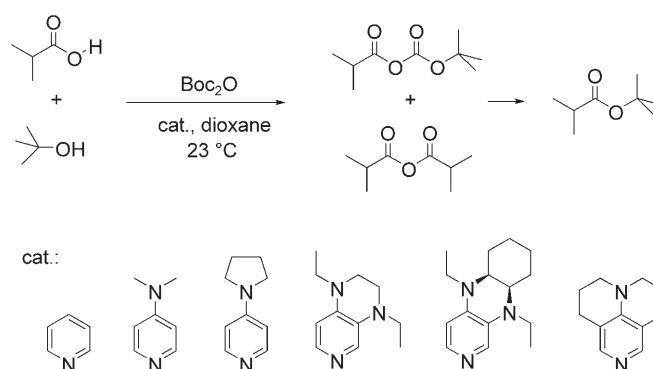
 Yi Li, Zhuo-An Zhao, Hu He, Shu-Li You*



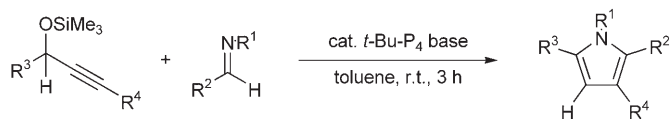
- 1891** Domino Catalysis in the Direct Conversion of Carboxylic Acids to Esters

Adv. Synth. Catal. **2008**, 350, 1891–1900

 I. Held, P. von den Hoff, D. S. Stephenson, H. Zipse*



Catalytic Deprotonative Functionalization of Propargyl Silyl Ethers with Imines

Adv. Synth. Catal. **2008**, 350, 1901–1906**1901**

Hiroshi Naka,* Daiki Koseki, Yoshinori Kondo*



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

*Author to whom correspondence should be addressed.