

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.

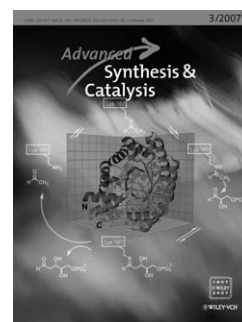
Contributions from industrial and governmental laboratories are highly encouraged. It is the goal of the journal to help initiate a new era of chemical science, based on the efforts of synthetic chemists and on interdisciplinary collaboration, so that chemistry will make an even greater contribution to the quality of life than it does now.

Advanced Synthesis & Catalysis

succeeding *Journal für praktische Chemie*
(founded in 1828)

2007, 349, 3, Pages 269–476

Issue 1 + 2/2007 was published online on January 18, 2007



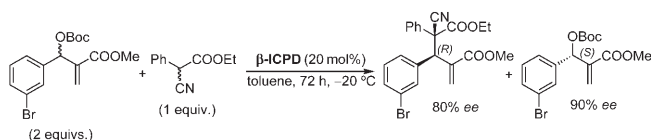
Cover Picture

The cover picture results from the seminal mechanistic work on DERA, deoxyribose-5-phosphate aldolase, a widely distributed catabolic enzyme, by Chi-Huey Wong and co-workers.

COMMUNICATIONS

Construction of Adjacent Quaternary and Tertiary Stereocenters via an Organocatalytic Allylic Alkylation of Morita–Baylis–Hillman Carbonates

Adv. Synth. Catal. **2007**, 349, 281–286



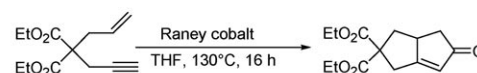
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Dirk Jan V. C. van Steenis, Tommaso Marcelli, Martin Lutz, Anthony L. Spek, Jan H. van Maarseveen, Henk Hiemstra*

Raney Cobalt: An Effective and Recyclable Catalyst for the Pauson–Khand Reaction

Adv. Synth. Catal. **2007**, 349, 287–291

Jean-Luc Muller, Annika Rickers, Walter Leitner*

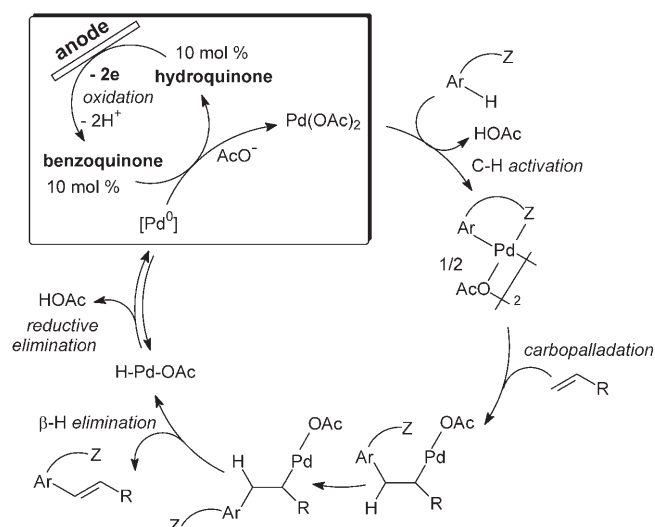


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- 292** Electrochemical Recycling of Benzoquinone in the Pd/
Benzoquinone-Catalyzed Heck-Type Reactions from Arenes

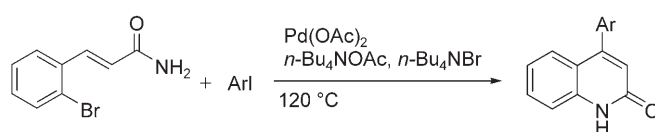
Adv. Synth. Catal. **2007**, 349, 292–296

Christian Amatore,* Chama Cammoun, Anny Jutand*



- 297** 4-Aryl-2-quinolones through a Pseudo-Domino Heck/
Buchwald–Hartwig Reaction in a Molten
Tetrabutylammonium Acetate/Tetrabutylammonium
Bromide Mixture

Adv. Synth. Catal. **2007**, 349, 297–302

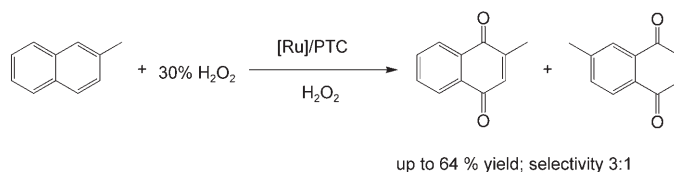


Gianfranco Battistuzzi, Roberta Bernini, Sandro Cacchi,*
Ilse De Salve, Giancarlo Fabrizi

- 303** A Novel and Convenient Process for the Selective Oxidation
of Naphthalenes with Hydrogen Peroxide

Adv. Synth. Catal. **2007**, 349, 303–308

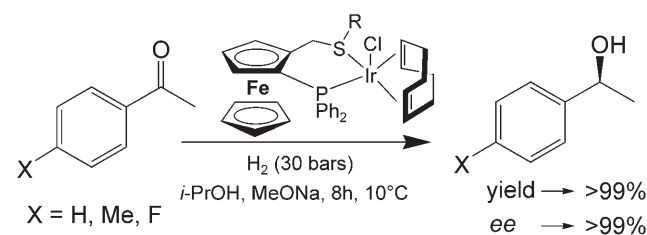
Feng Shi, Man Kin Tse, Matthias Beller*



- 309** Highly Efficient Asymmetric Hydrogenation of Alkyl Aryl
Ketones Catalyzed by Iridium Complexes with Chiral Planar
Ferrocenyl Phosphino-Thioether Ligands

Adv. Synth. Catal. **2007**, 349, 309–313

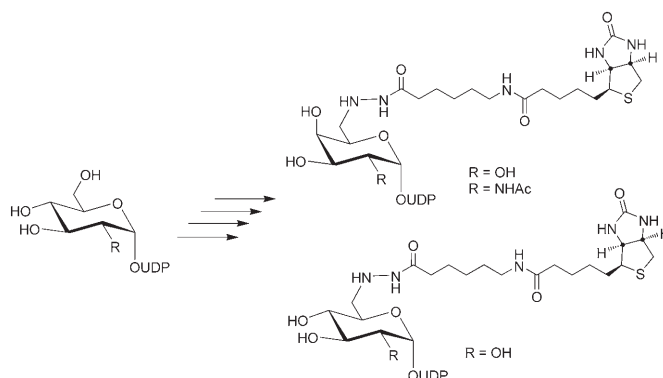
Erwan Le Roux, Raluca Malacea, Eric Manoury,*
Rinaldo Poli, Luca Gonsalvi, Maurizio Peruzzini*



- 314** Combination of UDP-Glc(NAc) 4'-Epimerase and Galactose
Oxidase in a One-Pot Synthesis of Biotinylated Nucleotide
Sugars

Adv. Synth. Catal. **2007**, 349, 314–318

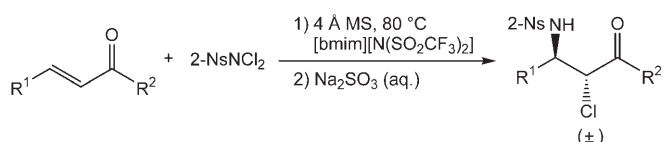
Darius-J. Namdjou, Birgit Sauerzapfe, Judith Schmiedel,
Gerald Dräger, Stéphane Bernatchez, Warren
W. Wakarchuk, Lothar Elling*



Ionic Liquid, 1-*n*-Butyl-3-methylimidazolium
Bis(trifluoromethanesulfonyl)imide, Resulted in the First
Catalyst-Free Aminohalogenation of Electron-Deficient
Alkenes

Adv. Synth. Catal. **2007**, 349, 319–322

 Yi-Ning Wang, Bukuo Ni, Allan D. Headley,* Guigen Li*



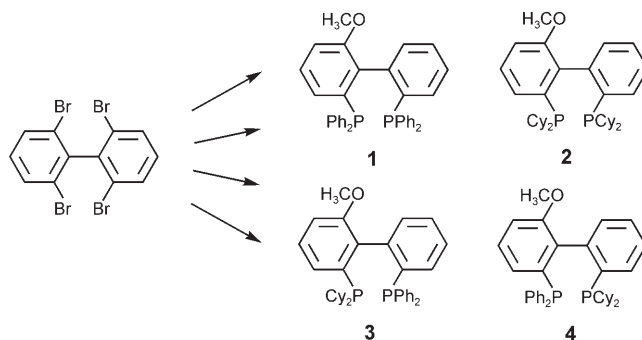
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FULL PAPERS

First Modular Synthesis of Dissymmetric Biaryldiphosphine
Ligands Allowing Tunable Steric and Electronic Effects

Adv. Synth. Catal. **2007**, 349, 323–336

Frédéric R. Leroux,* Hanspeter Mettler

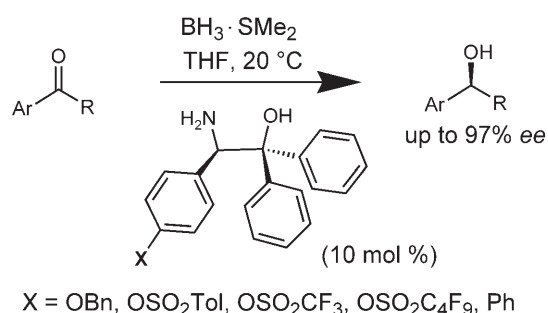


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4-Hydroxyphenylglycine-Based Oxazaborolidines for
Enantioselective Reductions of Ketones

Adv. Synth. Catal. **2007**, 349, 337–342


Manfred Braun,* Michael Sigloch, Jens Cremer

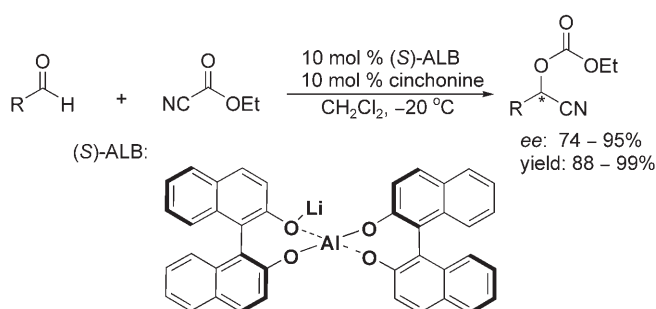


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Asymmetric Cyanoethoxycarbonylation of Aldehydes
Catalyzed by Heterobimetallic Aluminum Lithium
Bis(binaphthoxide) and Cinchonine

Adv. Synth. Catal. **2007**, 349, 343–349


 Shaohua Gou, Jun Wang, Xiaohua Liu, Wentao Wang,
Fu-Xue Chen, Xiaoming Feng*

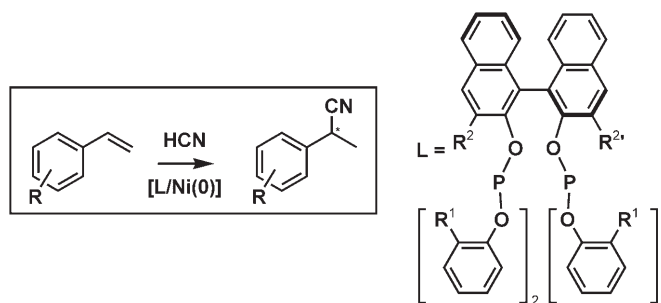


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Binaphthol-Based Diphosphite Ligands in Asymmetric
Nickel-Catalyzed Hydrocyanation of Styrene and 1,3-
Cyclohexadiene: Influence of Steric Properties

Adv. Synth. Catal. **2007**, 349, 350–356

 Jos Wilting, Michèle Janssen, Christian Müller, Martin Lutz,
Anthony L. Spek, Dieter Vogt*

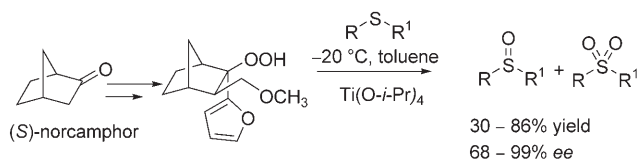


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- 357** Enantioselective Sulfoxidation and Kinetic Resolution Combined Protocol Mediated by a Functionalized (*S*)-Norcamphor-Based Hydroperoxide/Titanium(IV) Isopropoxide System

Adv. Synth. Catal. **2007**, 349, 357–363

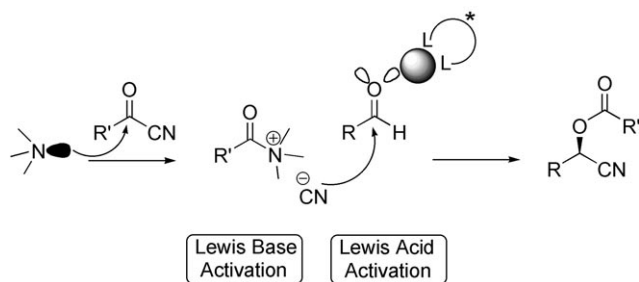
Alessandra Lattanzi,* Sandro Piccirillo, Arrigo Scettri*



- 364** Lewis Acid–Lewis Base-Catalysed Enantioselective Addition of α -Ketonitriles to Aldehydes

Adv. Synth. Catal. **2007**, 349, 364–372

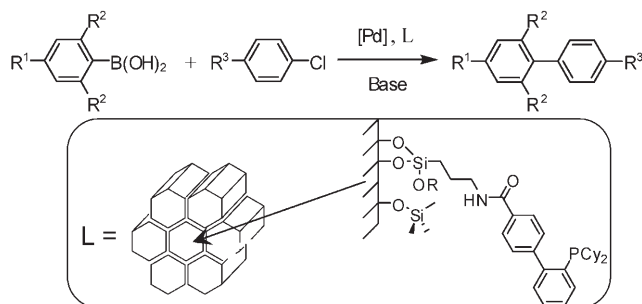
Stina Lundgren, Erica Wingstrand, Christina Moberg*



- 373** Suzuki–Miyaura Reactions of Aryl Chloride Derivatives with Arylboronic Acids using Mesoporous Silica-Supported Aryldicyclohexylphosphine

Adv. Synth. Catal. **2007**, 349, 373–381

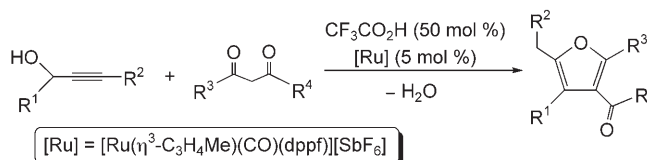
Reine Sayah, Katarzyna Glegola, Eric Framery,*
Véronique Dufaud*



- 382** A Novel Propargylation/Cycloisomerization Tandem Process Catalyzed by a Ruthenium(II)/Trifluoroacetic Acid System: One-Pot Entry to Fully Substituted Furans from Readily Available Secondary Propargylic Alcohols and 1,3-Dicarbonyl Compounds

Adv. Synth. Catal. **2007**, 349, 382–394

Victorio Cadierno,* José Gimeno,* Noel Nebra



- 395** Salicylaldimine Ruthenium Alkylidene Complexes: Metathesis Catalysts Tuned for Protic Solvents

Adv. Synth. Catal. **2007**, 349, 395–404

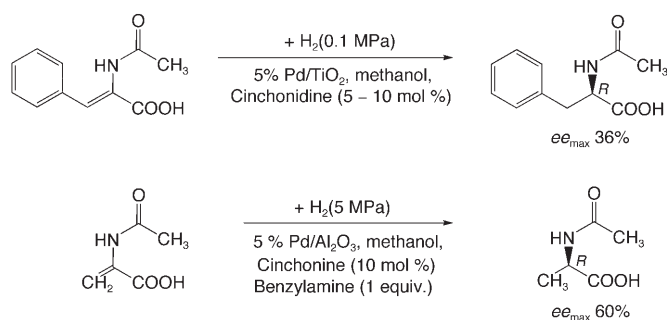
Joseph B. Binder, Ilia A. Guzei, Ronald T. Raines*



Enantioselective Hydrogenation of *N*-Acetyldehydroamino Acids over Supported Palladium Catalysts

Adv. Synth. Catal. **2007**, 349, 405–410

György Szöllösi,* Emese Szabó, Mihály Bartók



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Activation of C–Cl Bonds in Chloroalkanes by Nickel Oxide Nanoparticles: Formation of Tetrasubstituted Ammonium Salts from Tertiary Amines

Adv. Synth. Catal. **2007**, 349, 411–416

Kang Hyun Park, Il Gu Jung, Young Keun Chung,*
Jin Wook Han*

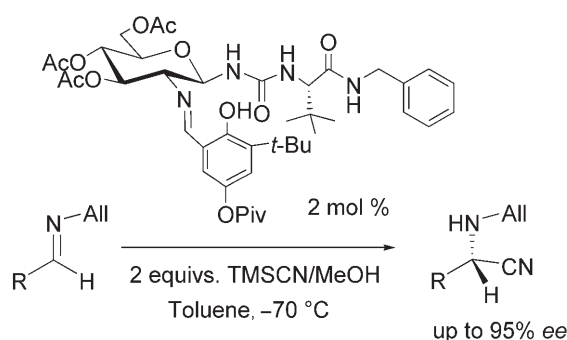


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Enantioselective Organocatalysis of Strecker and Mannich Reactions Based on Carbohydrates

Adv. Synth. Catal. **2007**, 349, 417–424

Christian Becker, Christine Hoben, Horst Kunz*

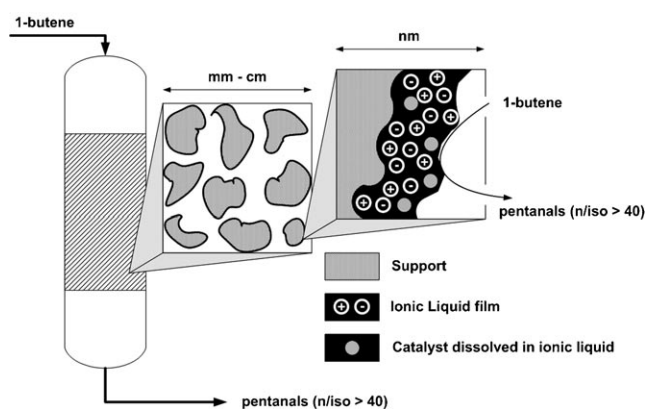


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Continuous Gas-Phase Hydroformylation of 1-Butene using Supported Ionic Liquid Phase (SILP) Catalysts

Adv. Synth. Catal. **2007**, 349, 425–431

Marco Haumann,* Katrin Dentler, Joni Joni,
Anders Riisager, Peter Wasserscheid

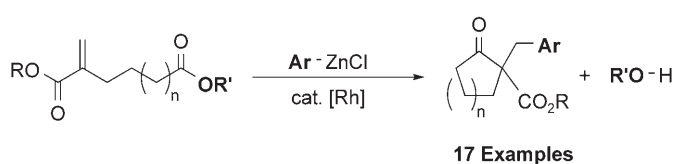


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A New Method for Constructing Quaternary Carbon Centres: Tandem Rhodium-Catalysed 1,4-Addition/Intramolecular Cyclisation

Adv. Synth. Catal. **2007**, 349, 432–440

Jérôme Le Nôtre, David van Mele, Christopher G. Frost*



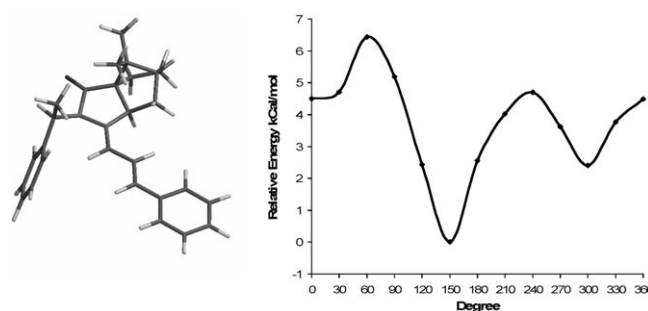
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UPDATES

- 441** Design of a Conformationally Rigid Hydrazide Organic Catalyst

Adv. Synth. Catal. **2007**, 349, 441–447

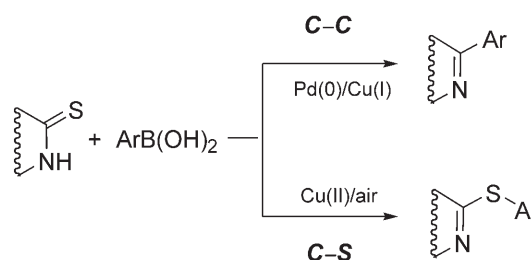
 Mathieu Lemay, Livia Aumand, William W. Ogilvie*



- 448** Desulfurative Carbon–Carbon Cross-Coupling of Thioamide Fragments with Boronic Acids


Adv. Synth. Catal. **2007**, 349, 448–452

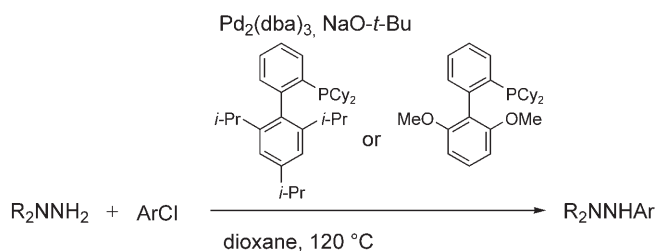
 Hana Prokopcová, C. Oliver Kappe*



- 453** Palladium-Catalyzed *N*-Arylation of *N,N*-Dialkylhydrazines with Aryl Chlorides

Adv. Synth. Catal. **2007**, 349, 453–458

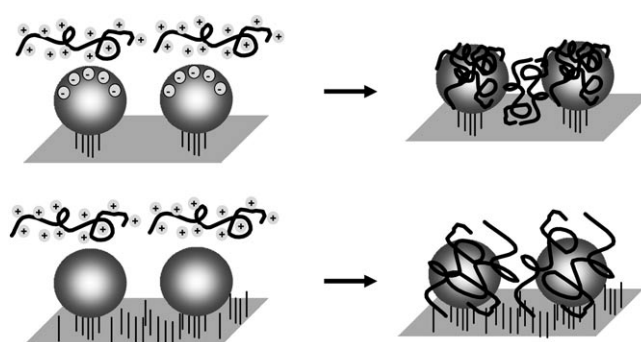
 Sandro Cacchi,* Giancarlo Fabrizi,* Antonella Goggiani, Simona Sgalla



- 459** Improved Stabilization of Genetically Modified Penicillin G Acylase in the Presence of Organic Cosolvents by Co-Immobilization of the Enzyme with Polyethyleneimine

Adv. Synth. Catal. **2007**, 349, 459–464

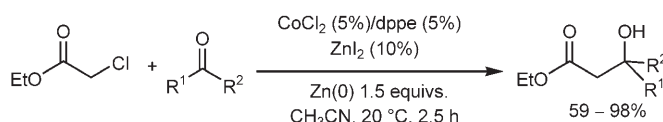
Tamara Montes, Valeria Grazú, Isabel Manso, Beatriz Galán, Fernando López-Gallego, Ramón González, Juan A. Hermoso, José L. García, José M. Guisán,* Roberto Fernández-Lafuente*



- 465** An Efficient Cobalt(I)-Catalysed Reformatsky Reaction using α -Chloro Esters

Adv. Synth. Catal. **2007**, 349, 465–468

Marco Lombardo,* Alessandra Gualandi, Filippo Pasi, Claudio Trombini*

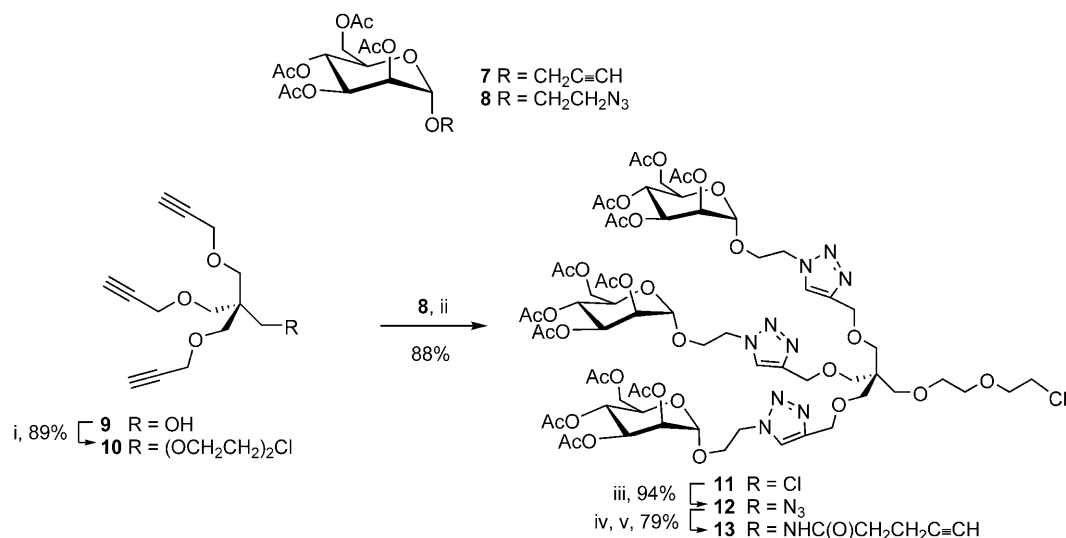


BOOK REVIEWS

- 469** Multiphase Homogeneous Catalysis
 Edited by B. Cornils, W. A. Herrmann, I. T. Horváth,
 W. Leitner, S. Mecking, H. Olivier-Bourbigou, D. Vogt
Adv. Synth. Catal. **2007**, 349, 469–470
 R. Tom Baker
- 471** Industrial Biotransformations
 Edited by Andreas Liese, Karsten Seelbach, Christian
 Wandrey
Adv. Synth. Catal. **2007**, 349, 471
 Wolfgang Kroutil
- 472** Palladium in Organic Synthesis
 Edited by Jiro Tsuji
Adv. Synth. Catal. **2007**, 349, 472
 Rainer Mahrwald

CORRIGENDUM

In the paper by Mariano Ortega-Muñoz, Javier Lopez-Jaramillo, Fernando Hernandez-Mateo, and Francisco Santoyo-Gonzalez in Issue 16 + 17, 2006, pp. 2410–2420, the structural formulae of compounds **7**, **8**, and **11–13** in Scheme 2 on page 2412 are incorrect: all of the sugar hydroxy groups should be acetylated. Also, the deacetylation step in the general procedure for the preparation of glyco-silicas **14–17** on page 2418 was missing. The correct scheme and procedure are as follows.



Scheme 2. Alkyne and azide carbohydrate derivatives for click-chemistry immobilization on functionalized silica. Reaction conditions: (i) (ClCH₂CH₂)₂O, NaOH; (ii) CuI(C₂H₅)₃P, DIPEA, toluene, MW; (iii) NaN₃/DMF/80 °C; (iv) H₂, Pd/C, MeOH; (v) HC≡CCH₂CH₂COOH, DCC, CH₂Cl₂.

General Procedure for the Preparation of Glyco-Silicas 14–17

The alkyne or azide sugar derivative **7**, **8**, **12** and **13** (0.3 mmol) were deprotected by standard Zemplén de-*O*-acetylation in NaOMe/MeOH (20 mL). The mixture was neutralized with Amberlite IR-120 (H) resin and filtered. After evaporation of the solvent, the crude residue was dissolved in dry DMF (5 mL). The complementary azide or alkyne functionalized silica **4** or **6** (1 g) was then suspended and the copper catalyst (EtO)₃P · CuI^[16c] (10 mmol %, 10 mgr) was subsequently added. The reaction mixture was irradiated at 800 W and 90 °C for 1 h in a Milestone Star Microwave Labstation until the IR spectra of the reaction mixture showed complete disappearance of the starting material. The reaction mixture was filtered and the resulting glyco-silica was successively washed with MeOH (2 × 30 mL), EDTA disodium salt solution (50 mM, 2 × 30 mL), water (2 × 30 mL), acetone (2 × 30 mL) and CH₂Cl₂ (2 × 30 mL). The glyco-silicas **14–17** were then dried under vacuum (1 mm Hg) at 50 °C for 16 h.



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

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