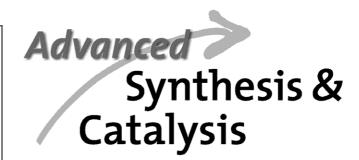
AIMS AND SCOPE

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.



succeeding Journal für praktische Chemie (founded in 1828)

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2007, 349, 17+18, Pages 2521-2748

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DEDICATED CLUSTER – COMMENTARIES

A 60th Birthday!

Adv. Synth. Catal. 2007, 349, 2533-2534

K. Barry Sharpless*

Jan-E. Bäckvall's 60th Birthday

Adv. Synth. Catal. 2007, 349, 2535

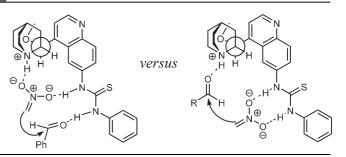
Björn Åkermark,* Pher G. Andersson*

DEDICATED CLUSTER – FULL PAPERS

Density Functional Theory Study of the *Cinchona* Thiourea-Catalyzed Henry Reaction: Mechanism and Enantioselectivity

Adv. Synth. Catal. 2007, 349, 2537-2548

Peter Hammar, Tommaso Marcelli, Henk Hiemstra, Fahmi Himo*



2533

2535

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2549 Direct Enantioselective Synthesis of Bicyclic Diels–Alder Products

Adv. Synth. Catal. 2007, 349, 2549-2555

Henrik Sundén, Ramon Rios, Yongmei Xu, Lars Eriksson, Armando Córdova*

2556 Rhodium-Catalyzed Asymmetric Transfer Hydrogenation of Aryl Alkyl Ketones Employing Ligands Derived from Amino Acids

Adv. Synth. Catal. 2007, 349, 2556-2562

Jenny Wettergren, Alexey B. Zaitsev, Hans Adolfsson*

2563 Ruthenium/Halide Catalytic System for C–C Bond Forming Reaction between Alkynes and Unsaturated Carbonyl Compounds

Adv. Synth. Catal. 2007, 349, 2563-2571

☐ Takahiro Nishimura,* Yosuke Washitake, Sakae Uemura*

2572 Arylation of Allyl Alcohols in Organic and Aqueous Media Catalyzed by Oxime-Derived Palladacycles: Synthesis of β-Arylated Carbonyl Compounds

Adv. Synth. Catal. 2007, 349, 2572-2584

Emilio Alacid, Carmen Nájera*

2585 Palladium Pincer Complex-Catalyzed Condensation of Sulfonimines and Isocyanoacetate to Imidazoline Derivatives. Dependence of the Stereoselectivity on the Ligand Effects

Adv. Synth. Catal. 2007, 349, 2585-2594

Juhanes Aydin, K. Senthil Kumar, Lars Eriksson, Kálmán J. Szabó*

$$\begin{array}{c} \text{CN_COOMe} + \begin{pmatrix} & & & & \\ & & &$$

2595

2603

2610

2619

2631

2641

Microwave-Assisted Asymmetric Intermolecular Heck Reaction using Phosphine-Thiazole Ligands

Adv. Synth. Catal. 2007, 349, 2595-2602

Päivi Kaukoranta, Klas Källström, Pher G. Andersson*

Study of the Efficiency of Amino-Functionalized Ruthenium and Ruthenacycle Complexes as Racemization Catalysts in the Dynamic Kinetic Resolution of 1-Phenylethanol

Adv. Synth. Catal. 2007, 349, 2603-2609

M. Eckert, A. Brethon, Y.-X. Li, R. A. Sheldon, I. W. C. E. Arends*

Efficient and General One-Pot Synthesis of Diaryliodonium Triflates: Optimization, Scope and Limitations

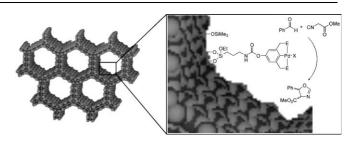
Adv. Synth. Catal. 2007, 349, 2610-2618

Marcin Bielawski, Mingzhao Zhu, Berit Olofsson*

PCP- and SCS-Pincer Palladium Complexes Immobilized on Mesoporous Silica: Application in C–C Bond Formation Reactions

Adv. Synth. Catal. 2007, 349, 2619-2630

Nilesh C. Mehendale, Jelle R. A. Sietsma, Krijn P. de Jong, Cornelis A. van Walree, Robertus J. M. Klein Gebbink, Gerard van Koten*



Memory Effects in Palladium-Catalyzed Allylic Alkylations of 2-Cyclohexen-1-yl Acetate

Adv. Synth. Catal. 2007, 349, 2631-2640

Nina Svensen, Peter Fristrup, David Tanner,* Per-Ola Norrby*

$$AcO$$
 PdL_n Nu + Nu

95% ee R₃P-Pd PR₃

R₃P-Pd·Cl⁻ up to 70:30

50:50

Iron-Catalyzed Nucleophilic Substitution of Allylic Acetate

Adv. Synth. Catal. 2007, 349, 2641-2646

Björn Åkermark,* Magnus P. T. Sjögren*

$$Fe_{2}CO_{9} \xrightarrow{CO} \xrightarrow{CO} \xrightarrow{CO} \xrightarrow{Nu} \xrightarrow{CO} \xrightarrow{CO} \xrightarrow{Fe} \xrightarrow{CO} \xrightarrow{Fe} \xrightarrow{CO} \xrightarrow{Me-N} \xrightarrow{CO} \xrightarrow{Me-N} \xrightarrow{Me} \xrightarrow{Me} \xrightarrow{Me} \xrightarrow{Me} \xrightarrow{Me} \xrightarrow{Me}$$

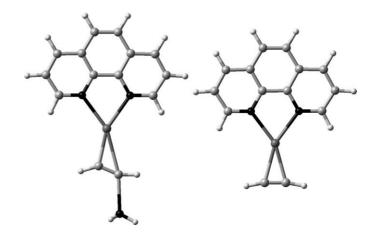
 $\ \, \odot$ 2007 Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim

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2647 Development of a Q2MM Force Field for the Silver(I)-Catalyzed Hydroamination of Alkynes

Adv. Synth. Catal. 2007, 349, 2647-2654

Patrick J. Donoghue, Elsa Kieken, Paul Helquist, Olaf Wiest*

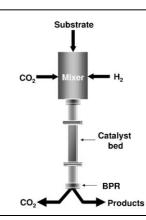


COMMUNICATIONS

2655 Continuous Flow Hydrogenation of a Pharmaceutical Intermediate, [4-(3,4-Dichlorophenyl)-3,4-dihydro-2*H*-naphthalenyidene]methylamine, in Supercritical Carbon Dioxide

Adv. Synth. Catal. 2007, 349, 2655-2659

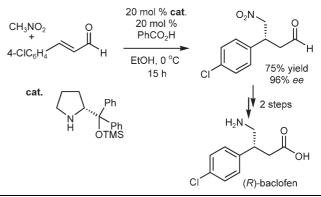
Peter Clark, Martyn Poliakoff,* Andy Wells*



2660 Highly Enantioselective Organocatalytic Conjugate Addition of Nitromethane to α,β -Unsaturated Aldehydes: Three-Step Synthesis of Optically Active Baclofen

Adv. Synth. Catal. 2007, 349, 2660-2664

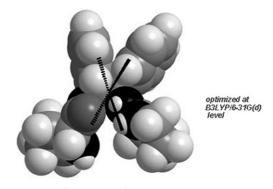
Liansuo Zu, Hexin Xie, Hao Li, Jian Wang, Wei Wang*



2665 Asymmetric Direct Aldol Reaction of α -Keto Esters and Acetone Catalyzed by Bifunctional Organocatalysts

Adv. Synth. Catal. 2007, 349, 2665-2668

Fei Wang, Yan Xiong, Xiaohua Liu, Xiaoming Feng*



C₂-symmetric bifunctional aminocatalyst

Rhodium-Catalyzed Hydroalkynylation of Internal Alkynes with Silylacetylenes: An Alkynylrhodium(I) Intermediate Generated from the Hydroxorhodium(I) Complex [Rh(OH)(binap)]₂

SiR₃ 2669 1,4-dioxane

Adv. Synth. Catal. 2007, 349, 2669-2672

 $Rh\ catalyst:\ [Rh(OH)((\it{R})-binap)]_2,\ [Rh(OH)(cod)]_2/dpph$

Takahiro Nishimura,* Xun-Xiang Guo, Kohei Ohnishi, Tamio Hayashi*

Ligand-Free Copper-Catalyzed N-Arylation of Nitrogen Nucleophiles

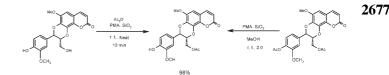
2673 Cu₂O (10 mol %) heteroheterocycle ligand-free!

Adv. Synth. Catal. 2007, 349, 2673-2676

X = I, Br, Cl

Arkaitz Correa, Carsten Bolm*

Part 148 in the Series "Studies on Novel Synthetic Methodologies:" Selective Acetylation of Alcohols, Phenols and Amines and Selective Deprotection of Aromatic Acetates using Silica-Supported Phosphomolybdic Acid



Adv. Synth. Catal. 2007, 349, 2677-2683

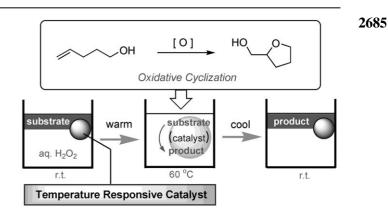
Biswanath Das,* Ponnaboina Thirupathi, Rathod Aravind Kumar, Keetha Laxminarayana

FULL PAPERS

A New Solid-Phase Reaction System Utilizing a Temperature-Responsive Catalyst: Oxidative Cyclization with Hydrogen Peroxide

Adv. Synth. Catal. 2007, 349, 2685-2689

Hiromi Hamamoto, Yachiyo Suzuki, Hideyo Takahashi, Shiro Ikegami*



Microwave-Assisted Simple and Efficient Ligand Free Copper Nanoparticle Catalyzed Aryl-Sulfur Bond Formation

Cu Nanoparticle (20 mol %) ArSR RSH K2CO3, DMF MW (120 °C), 5 - 7 min 61 - 98 %

Adv. Synth. Catal. 2007, 349, 2690-2696

Ar = aryl; R = aryl, alkyl.

Brindaban C. Ranu,* Amit Saha, Ranjan Jana

2690

UPDATES

2697 Practical Two-Step Synthesis of an Enantiopure Aliphatic Terminal (*S*)-Epoxide Based on Reduction of Haloalkanones with "Designer Cells"

whole cell catalyst

whole cell catalyst

Catalyst

Whole cell catalyst

Substrate input:
Up to 208 g/L

Substrate input:
Up to 208 g/L

Substrate input:
Subst

Adv. Synth. Catal. 2007, 349, 2697-2704

- Albrecht Berkessel,* Claudia Rollmann,
 Francoise Chamouleau, Stefanie Labs, Oliver May,
 Harald Gröger*
- 2705 A Practical Transition Metal-Free Aryl-Aryl Coupling

Adv. Synth. Catal. 2007, 349, 2705-2713

Method: Arynes as Key Intermediates

Frédéric R. Leroux,* Laurence Bonnafoux, Christophe Heiss, Françoise Colobert, Don Antoine Lanfranchi

2715 Annual Indexes

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

*Author to whom correspondence should be addressed.