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

succeeding Journal für praktische Chemie (founded in 1828)

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Organocatalysis: A Complementary Catalysis Strategy Advances Organic Synthesis

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Neutral Coordinate-Organocatalysts in Organic Synthesis: Allylation of Acylhydrazones with Allyltrichlorosilanes

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1035 Nucleophilic Phosphine Organocatalysis

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1051 Organocatalytic Oxidations Mediated by Nitroxyl Radicals

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1073 anti-Selective Asymmetric Synthesis of β-Hydroxy-α-amino Acid Esters by the *in situ* Generated Chiral Quaternary Ammonium Fluoride-Catalyzed Mukaiyama-Type Aldol Reaction

Adv. Synth. Catal. 2004, 346, 1073-1076

Takashi Ooi, Mika Taniguchi, Kanae Doda, Keiji Maruoka*

OBu-t
OSiMe₃

$$(S,S)$$
-1 (2 mol %)

KF (1 equiv.) 1 N HCl
THF-toluene
-78 to -40 °C
OF
NH₂
anti selective
90 - 97% ee

1077 Highly Enantio- and Diastereoselective Organocatalytic Domino Michael-Aldol Reactions of β-Diketone and β-Ketosulfone Nucleophiles with α,β-Unsaturated Ketones

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1081 Bredereck's Reagent Revisited: Latent Anionic Ring-Opening Polymerization and Transesterification Reactions

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Adv. Synth. Catal. 2004, 346, 1087-1089

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Functionalization of Alkynes Catalyzed by t-Bu-P4 Base

Adv. Synth. Catal. 2004, 346, 1090-1092

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First Synthesis of a Highly Basic Dendrimer and its Catalytic Application in Organic Methodology

Adv. Synth. Catal. 2004, 346, 1093-1096

Arunkanti Sarkar, Palanichamy Ilankumaran, Philip Kisanga, John G. Verkade*

$$\begin{array}{c} \text{MeO} \xrightarrow{\text{five}} [\text{CH}_2\text{CH}_2\text{N}[(\text{CH}_2)_3\text{N}[(\text{CH}_2)_3\text{NHR}]_2]_2}]_2\\ \text{dendrimer catalyst} \\ \text{HO} & \text{R} = \\ & \text{R}'_3\text{PN}_3 \\ & \text{R}'_3\text{PN}_3 \end{array} \begin{array}{c} \text{O} \\ \text{R}'_3\text{P} = \text{P}(\text{i-BuNCH}_2\text{CH}_2)_3\text{N} \\ \\ \text{R}'_3\text{PN}_3 \\ & \text{R}'_3\text{PN}_3 \end{array}$$

Thiazolium Ylide-Catalyzed Intramolecular Aldehyde—Ketone Benzoin-Forming Reactions: Substrate Scope

Adv. Synth. Catal. 2004, 346, 1097-1100

Yoshifumi Hachisu, Jeffrey W. Bode, Keisuke Suzuki*

R
$$\begin{array}{c}
\text{cat. 1} \\
\text{base} \\
\hline
40 ^{\circ}\text{C} \\
21 - 90\%
\end{array}$$

$$n = 1, 2$$

N-Arenesulfonyl-2-aminomethylpyrrolidines – Novel Modular Ligands and Organocatalysts for Asymmetric Catalysis

Adv. Synth. Catal. 2004, 346, 1101-1105

Nils Dahlin, Anders Bøgevig, Hans Adolfsson*

The Chiral Diamine Mediated Asymmetric Baylis-Hillman Reaction

Adv. Synth. Catal. 2004, 346, 1106-1110

Yujiro Hayashi,* Tomohiro Tamura, Mitsuru Shoji

up to 75% ee

1111 Catalysis of the Hajos–Parrish–Eder–Sauer–Wiechert Reaction by *cis*- and *trans*-4,5-Methanoprolines: Sensitivity of Proline Catalysis to Pyrrolidine Ring Conformation

Adv. Synth. Catal. 2004, 346, 1111-1115

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1117 Planar Chiral PHANOLs as Double Hydrogen Bonding Donor Organocatalysts: Synthesis and Catalysis

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1141 Proline-Derived *N*-Sulfonylcarboxamides: Readily Available, Highly Enantioselective and Versatile Catalysts for Direct Aldol Reactions

Adv. Synth. Catal. 2004, 346, 1141-1146

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1147 The Use of *N*-Alkyl-2,2′-bipyrrolidine Derivatives as Organocatalysts for the Asymmetric Michael Addition of Ketones and Aldehydes to Nitroolefins

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A New Approach to Axially Chiral Bipyridine *N*,*N'*-Dioxides Bearing Aromatic Substituents and their Use for Catalytic Asymmetric Allylation of Aldehydes with All-yl(trichloro)silane

Adv. Synth. Catal. 2004, 346, 1169-1174

Asato Kina, Toyoshi Shimada, Tamio Hayashi*

CI

$$N - O$$
 1) ArMgBr, $PdCl_2(dppf)$ HO $N - O$
 $N - O$ 2) NaOH, MeOH HO $N - O$
 (R_{nap}, R_{pyr}) -1 (R) -2

Theoretical Explorations of Enantioselective Alkylation Reactions of Pyrroles and Indoles Organocatalyzed by Chiral Imidazolidinones

Adv. Synth. Catal. 2004, 346, 1175-1185

Ruth Gordillo, Jennifer Carter, K. N. Houk*

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Polystyrene-Anchored *Cinchona* Ammonium Salts: Easily Recoverable Phase-Transfer Catalysts for the Asymmetric Synthesis of α -Amino Acids

Adv. Synth. Catal. 2004, 346, 1186-1194

Rafael Chinchilla, Patricia Mazón, Carmen Nájera*

Ph
$$CO_2R^1$$
 R^2Br $Ph CO_2R^1$ R^2Br $Ph R^2$ R^2 R

Esterolytic Peptide Dendrimers with a Hydrophobic Core and Catalytic Residues at the Surface

Adv. Synth. Catal. 2004, 346, 1195-1204

Anthony Clouet, Tamis Darbre, Jean-Louis Reymond*

Aza-Baylis – Hillman Reactions of N-(Arylmethylene)-diphenylphosphinamides with Activated Olefins in the Presence of Various Lewis Bases

Adv. Synth. Catal. 2004, 346, 1205-1219

Min Shi,* Gui-Ling Zhao

+ double aza-Baylis-Hillman adduct

+ abnormal cyclized aza-Baylis-Hillman adduct

1220 Aza-Baylis–Hillman Reaction of β-Substituted Activated Olefins with *N*-Tosyl Imines

Adv. Synth. Catal. 2004, 346, 1220-1230

Yong-Ling Shi, Yong-Mei Xu, Min Shi*

- Ar=CH=NTs + R' R Lewis base THF, r.t. R R = Me, H, Ph. R' = Me, CH₂CH₂CH₂CH₃
- 1231 The Development of the Asymmetric Morita-Baylis-Hillman Reaction Catalyzed by Chiral Brønsted Acids

Adv. Synth. Catal. 2004, 346, 1231-1240

Nolan T. McDougal, Whitney L. Trevellini, Stacy A. Rodgen, Laura T. Kliman, Scott E. Schaus*

30 - 88% yield 34 - 96% ee

UPDATES

1241 Product-Catalyzed Aldol Reaction between Trimethylsilyl Enolates and Aldehydes

Adv. Synth. Catal. 2004, 346, 1241-1246

Hidehiko Fujisawa, Takashi Nakagawa, Teruaki Mukaiyama*

1247 Scale-Up Studies for the Asymmetric Juliá – Colonna Epoxidation Reaction

Adv. Synth. Catal. 2004, 346, 1247-1249

Arne Gerlach,* Thomas Geller

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

*Author to whom correspondence should be addressed.