Cationic Bismuth Compounds in Organic Synthesis and Catalysis: New Prospects for CH Activation

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Synthesis of β-Phenethyl Ethers by Base-Catalyzed Alcohol Addition Reactions to Aryl Alkenes

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**From Straightforward Gold(I)- Catalyzed Enyne Cyclizations to more Demanding Intermolecular Reactions of Alkynes with Alkenes**

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**Radical-type Reactions Controlled by Cobalt: From Carbene Radical Reactivity to the Catalytic Intermediacy of Reactive o-Quinodimethanes**

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**Asymmetric Copper-Catalyzed C(sp)–H Bond Insertion of Carbenoids Derived from N-Tosylhydrazones**

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Fe(ClO$_4$)$_3$·H$_2$O-Catalyzed Ritter Reaction: A Convenient Synthesis of Amides from Esters and Nitriles

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M. Ji*
Southeast University,
P. R. of China

Fe(ClO$_4$)$_3$·H$_2$O (5 mol%) + R$^1$CN → R$^1$CONH$^+$

R$^1$: benzyI, sec-alkyl
R$^2$: aryI, benzyl, tert-butyl

42 examples 72–94% yield
14 examples 88–97% yield

Drug synthesis (87%)

(2-Benzzyloxyphenyl)acetyl (BnPAc): A Participating Relay Protecting Group for Diastereoselective Glycosylation and the Synthesis of 1,2-trans Glycosyl Esters

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BnO
BnO
BnO
BnO

R$^1$OH
R$^2$OH

O
O
O
O

R$^1$Br
R$^2$Br

anchimeric assistance

1,2-trans glycosides
and
1,2-trans glycosyl esters

Copper-Catalyzed Base-Free N-Arylation of 8-Aminoquinoline Amides through Chelation Assistance

G.-W. Zhang
A.-X. Zhou
W. He
X.-F. Xia*
Jiangnan University,
P. R. of China

Cu(OAc)$_2$ (20%)

without base
without ligand

30 examples 23–88% yield
Dehydroxymethyl Bromination of Alkoxybenzyl Alcohols by Using a Hypervalent Iodine Reagent and Lithium Bromide

\[
\text{PhI(OAc)}_2, \text{LiBr} \\
\text{CF}_3\text{CH}_2\text{OH} \\
r.t., 10 \text{ min} \\
15 \text{ examples} \\
\text{up to 99\% yield}
\]

mild conversion of alkoxybenzyl alcohols to bromides

Synthesis of $\beta$-$\text{CF}_3$ Ketones through Copper/Silver Cocatalyzed Oxidative Coupling of Enol Acetates with $\text{ICH}_2\text{CF}_3$

\[
\text{Cu(OAc)}_2\cdot\text{H}_2\text{O}, \text{Ag}_2\text{SO}_4 \\
\text{TBHP, Et}_3\text{N} \\
\text{CH}_3\text{CN}, 100 \degree \text{C} \\
19 \text{ examples} \\
21-70\% \text{ yield} \\
\text{Simple substrates} \\
\text{High regio-selectivity}
\]

Copper-Catalyzed Synthesis of Substituted 4-Acylpyrazole Derivatives through a Cascade Transformation from $N$-Propargylic Sulfonylhydrazones and Diaryliodonium Salts

\[
\text{Cu(OTf)}_2 (10 \text{ mol\%}) \\
\text{DBE, H}_2\text{O}, 80 \degree \text{C} \\
\text{in air} \\
13 \text{ examples} \\
41-66\% \text{ yield}
\]
**Palladium(0)-Catalyzed Diastereoselective (3+2) Cycloadditions of Vinylcyclopropanes with Sulfonyl-Activated Imines**

J. Ling, M. Laugeois, V. Ratovelomanana-Vidal, M. R. Vitale
PSL Université Paris, Chimie ParisTech, France

**Abstract**

Pd(dba)$_2$·CHCl$_3$ (1 mol%) and dppe (2 mol%) catalyzed diastereoselective (3+2) cycloadditions of vinylcyclopropanes with sulfonyl-activated imines. 31 examples up to 99% yield and up to >50:1 dr.

**Keywords**
Palladium, Diastereoselective, Cycloaddition, Vinylcyclopropanes, Sulfonyl-Activated Imines

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**Dimethylisosorbide (DMI) as a Bio-Derived Solvent for Pd-Catalyzed Cross-Coupling Reactions**

University of St Andrews, UK

**Abstract**

DMI as a bio-derived solvent for Pd-catalyzed cross-coupling reactions. 12 examples (Sonogashira, 65–98% yield), 13 examples (Suzuki-Miyaura, 47–91% yield), and 13 examples (Mizoroki-Heck, 62–100% yield).

**Keywords**
Pd-Catalyzed Cross-Coupling, Dimethylisosorbide (DMI), Bio-Derived Solvent

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**Brønsted Acid Mediated Direct α-Hydroxylation of Cyclic α-Branched Ketones**

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**Abstract**

Brønsted acid (PhNO, 2.5 equiv) mediated direct α-hydroxylation of cyclic α-branched ketones. 13 examples (PhMe, r.t., R = Ar, Alk).

**Keywords**
Brønsted Acid, Direct α-Hydroxylation, Cyclic α-Branched Ketones
Catalyst-Free Three-Component Synthesis of Spirobenzimidazolidines Bearing an Indole Scaffold

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Z. Zamani
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K₂S₂O₈-Mediated Arylmethylation of Indoles with Tertiary Amines via sp³ C–H Oxidation in Water

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A. K. Yadav
L. D. S. Yadav*
R. K. P. Singh*
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Organic Photoredox Catalysis for Pschorr Reaction: A Metal-Free and Mild Approach to 6H-Benzoc[chromenes]

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Q.-F. Bai
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G. Feng*
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[4-Iodo-3-(isopropylcarbamoyl)phenoxy]acetic Acid as a Highly Reactive and Easily Separable Catalyst for the Oxidative Cleavage of Tetrahydrofuran-2-methanols to γ-Lactones

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University of Toyama, Japan

**Oxone® (4 equiv)**
MeNO₂–DMF (10:1)
50 °C, 5–15 h

10 examples up to 90% yield

Na₂CO₃-Catalyzed O-Acylation of Phenols for the Synthesis of Aryl Carboxylates with Use of Alkenyl Carboxylates

X.-Y. Zhou* X. Chen*
Liupanshui Normal University, P. R. of China

**Inorganic Base**

R = alkyl and allyl
R' = vinyl or prop-1-en-2-yl

yield: 27 to >99%

Synthesis of Multisubstituted Guanidines through Palladium-Catalyzed Insertion of Isonitriles

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Guangxi Key Laboratory of Special Non-wood Forest Cultivation and Utilization, Guangxi Zhuang Autonomous Region Forestry Research Institute, P. R. of China

**PdCl₂ (10 mol %)**
Cs₂CO₃ (1 equiv)
CH₃CN, 70 °C, air

18 examples 62–88% yields

Dual function of isonitriles
Isonitrile insertions with unactivated amides