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

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Synlett 2018, 29, 2213–2217
DOI: 10.1055/s-0037-1610160

Cationic Bismuth Compounds for CH Activation

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

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Synlett 2018, 29, 2218–2224
DOI: 10.1055/s-0037-1610166

\[ \text{alkene} + \text{alcohol} \xrightarrow{\text{P4-t-Bu, catalytic superbase}} \text{β-phenethyl ether} \]

- broad arene and alcohol scope
- selective addition of complex alcohols, diols and amino alcohols
- enabled by organic superbase
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(ClO₄)₃·H₂O-Catalyzed Ritter Reaction: A Convenient Synthesis of Amides from Esters and Nitriles

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

Copper-Catalyzed Base-Free N-Arylation of 8-Aminoquinoline Amides through Chelation Assistance
Dehydroxymethyl Bromination of Alkoxybenzyl Alcohols by Using a Hypervalent Iodine Reagent and Lithium Bromide

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S. Kitamoto
K. Fujimura
Y. Hirose
H. Hamamoto
A. Nakamura
Y. Miki
T. Maegawa*
Kindai University, Japan

PhI(OAc)$_2$, LiBr
CF$_3$CH$_2$OH
r.t., 10 min
15 examples
up to 99% yield

mild conversion of alkoxybenzyl alcohols to bromides

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

Y. Xiong
D. Chen
S. Zeng
C. Cheng
P. Wang
W. Deng*
J. Xiang*
N. Yi*
Hunan University, P. R. of China

Cu(OAc)$_2$, H$_2$O, Ag$_2$SO$_4$
TBHP, Et$_3$N
CH$_3$CN, 100 °C
19 examples
21–70% yield
Simple substrates
High regio-selectivity

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

R.-H. Li
X.-Y. Fan
Z.-L. Hu
Z.-K. Liu
Y. Yang
H.-T. Tang
Y.-H. Chen*
L. Chen
Z.-P. Zhan
Xiamen University, P. R. of China

Cu(OTf)$_2$ (10 mol%)
DBE, H$_2$IO, 80 °C
in air
3
13 examples
41–66% yield
**Palladium(0)-Catalyzed Diastereoselective (3+2) Cycloadditions of Vinylcyclopropanes with Sulfonyl-Activated Imines**

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M. Laugeois
V. Ratovelomanana-Vidal
M. R. Vitale*

PSL Université Paris, Chimie
ParisTech, France

Pd\(_2\)(dba)\(_3\)·CHCl\(_3\) (1 mol%) dppe (2 mol%)

Toluene, r.t.

31 examples

Up to 99% yield

Up to >50:1 dr

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

K. L. Wilson
J. Murray
H. F. Sneddon
C. Jamieson
A. J. B. Watson*

University of St Andrews, UK

Sonogashira

12 examples

66–96% yield

Mizoroki-Heck

13 examples

47–91% yield

Suzuki-Miyaura

13 examples

62–100% yield

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

G. A. Shevchenko
S. Dehn
B. List*

Max-Planck-Institut für Kohlenforschung, Germany

PhNO (2.5 equiv)

\(\text{Cl}_2\text{CO}_2\text{H} (3.0\text{ equiv})\)

PhMe, r.t.

R = Ar, Alk

PhNO

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Catalyst-Free Three-Component Synthesis of Spirobenzimidazolidines Bearing an Indole Scaffold

F. M. Moghaddam*
A. Moafi
Z. Zamani
M. Daneshfar
Sharif University of Technology, Iran

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

M. Singh
A. K. Yadav
L. D. S. Yadav*
R. K. P. Singh*
University of Allahabad, India

Organic Photoredox Catalysis for Pschorr Reaction: A Metal-Free and Mild Approach to 6H-Benzochromenes

J.-Y. He
Q.-F. Bai
C. Jin
G. Feng*
Shaoxing University, P. R. of China
[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

T. Yakura*  
T. Fujiwara  
H. Nishi  
Y. Nishimura  
H. Nambu  
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

R = alkyl, aryl  
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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X.-J. Meng  
L. Yang*  
H.-T. Tang*  
Y.-M. Pan  
Guangxi Normal University, P. R. of China  
Guangxi Key Laboratory of Special Non-wood Forest Cultivation and Utilization, Guangxi Zhuang Autonomous Region Forestry Research Institute, P. R. of China

Ar = phenyl, napthyl, furyl, thienyl  
R = alkyl

18 examples  
62–88% yields