Harnessing C–O Bonds in Stereoselective Cross-Coupling and Cross-Electrophile Coupling Reactions

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Harnessing C–O Bonds in Stereoselective Cross-Coupling and Cross-Electrophile Coupling Reactions

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(4+1)-Cycloadditions Exploiting the Biphilicity of Oxyphosphonium Enolates and RhII/PdII-Stabilized Metallocarbenes for the Construction of Five-Membered Frameworks

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Allenes: Versatile Building Blocks in Cobalt-Catalyzed C–H Activation

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Cooperative Hydrogen Atom Transfer: From Theory to Applications

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Synthetic Studies on the Viridin Skeleton through Regio- and Stereoselective Functionalization of the AE-Ring Moiety

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S. Ishida
G. Itoh
K. Sugiyama
C. Yuki
M. Egi
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Iron-Mediated Radical Nitrohalogenation Reactions of Enynes with tert-Butyl Nitrite

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Iron-Mediated Radical Nitrohalogenation Reactions of Enynes with tert-Butyl Nitrite

Y = TsN or O

+ TBN

+ K/NaBr+

convenient operations
good selectivity (Z/E ratio up to 100%)
18 examples, yield up to 90%
various nitro/halogen-containing heterocycles

Facile Synthesis of 4-Perfluoroalkylated 2H-Pyran-2-ones Bearing Indole Skeleton via a Base-Promoted Cascade Process

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L. Shen
J. Han
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Facile Synthesis of 4-Perfluoroalkylated 2H-Pyran-2-ones Bearing Indole Skeleton via a Base-Promoted Cascade Process

Et3N, THF

40 °C, 24 h

16 examples
up to 99% yield

Diastereoselective Synthesis of Spiropyrazolones via 1,3-Dipolar [3+2] Cycloadditions between Pyrazolone-Based Olefins and N,N'-Cyclic Azomethine Imines

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X.-Z. Fan
H. Zhang
L.-Y. Cai
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Diastereoselective Synthesis of Spiropyrazolones via 1,3-Dipolar [3+2] Cycloadditions between Pyrazolone-Based Olefins and N,N'-Cyclic Azomethine Imines

PhCO2H

(20 mol%)
toluene

110 °C, 2 h

32 examples
up to 98% yield
up to >20:1 dr
Ligand-Free Palladium-Catalyzed Carbonylative Suzuki Couplings of Vinyl Iodides with Arylboronic Acids under Substoichiometric Base Conditions

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X. Gong
W. Han*

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H₂O₂-Promoted Alkylation of Quinoxalin-2(1H)-ones with Styrenes and Dimethyl Sulfoxide

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H. Yao*
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Z. Yan
F. Xiong
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Iron-Catalyzed Oxidative Radical Alkoxy carbonylation of Activated Alkenes with Carbazates toward Alkoxy carbonylated Benzimidazo[2,1-a]isoquinolin-6(5H)-ones

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M. Li
H. Huang
F. Wang
X. Hu
X. Zhang*

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Hunan Provincial Key Laboratory of Water Treatment Functional Materials, P. R. of China
Hunan Province Engineering Research Center of Electroplating Wastewater Reuse Technology, P. R. of China
Palladium-Catalyzed Aerobic Oxidative Carbonylation of Amines Enables the Synthesis of Unsymmetrical N,N′-Disubstituted Ureas

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H. Du
X. Gong
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Green Aerobic Oxidation of Thiols to Disulfides by Flavin–Iodine Coupled Organocatalysis

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R. Kozako
H. Iida*
Shimane University, Japan

Chiral Phosphoric Acid Catalyzed Enantioselective [4+3]-Cyclization Reaction of Indol-4-ylmethanols and Quinone Esters

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Y. Qian
X. Lin*
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Diastereoselective Synthesis of Morpholine Derivatives from Grignard Reagents and N-Sulfinyl Imines

\[
\text{R} = \text{primary alkyl, secondary alkyl, (het)aryl}
\]

up to 76% yield
up to >95:5 dr

1) AlMe\(_3\) (1.1 equiv)
TBME, –78 °C

2) NaH (3.0 equiv)
18-crown-6 (0.5 equiv)
THF, rt

Synthesis of α-Deuteroalcohols by Single-Electron Umpolung REDuctive Deuteration of Carbonyls Using D\(_2\)O as Deuterium Source

D-incorporation >98%
D\(_2\)O as deuterium source
Mild reaction conditions
Excellent chemoselectivity

Synthetic applications in deuterated drugs, hormones, and natural products

Chiral Silver Alkoxide Catalyzed Asymmetric Aldol Reaction of Alkenyl Esters with Isatins

up to >99% yield
anti/syn = 92:8 to <1:20
up to 98% ee