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

Z. D. Tucker  
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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

S. Hori
S. Ishida
G. Itoh
K. Sugiyama
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K. Yahata
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Iron-Mediated Radical Nitrohalogenation Reactions of Enynes with tert-Butyl Nitrite

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Luoyang Normal University, P. R. of China

**Y**Ar/H**Me**O**Y**OBr/I**Ar/H**Me

Y = TsN or O

+ TBN KI/NaBr+

convenient operations
good selectivity (Z/E ratio up to 100%)

18 examples, yield up to 90%

various nitro/halogen-containing heterocycles

FeSO₄·7H₂O (0.4 equiv)

CH₃CN, 50 °C

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

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CN

RF

CO₂Me

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

Beijing University of Technology, P. R. of China

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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J. Chen
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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

X. Zhong
H. Yao*
B. Wang
Z. Yan
F. Xiong
S. Lin*
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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

H. Zeng
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Letter
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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

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

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Letter
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Diastereoselective Synthesis of Morpholine Derivatives from Grignard Reagents and N-Sulfinyl Imines

\[
\begin{align*}
\text{R} = & \text{primary alkyl, secondary alkyl, (het)aryl} \\
1) & \text{AlMe}_3 (1.1 \text{ equiv}) \\
& \text{TBME, } -78 \degree \text{C} \\
2) & \text{NaH (3.0 \text{ equiv})} \\
& 18\text{-crown}-6 (0.5 \text{ equiv}) \\
& \text{THF, rt}
\end{align*}
\]

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


\[
\begin{align*}
\text{R}^1 & \text{R}^2 / \text{H} \\
\text{SmI}_2 & \text{-D}_2\text{O} \\
\text{R}^1 = & \text{alkyl or aryl} \\
\text{43 examples}
\end{align*}
\]

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

\[
\begin{align*}
\text{OCOCX}_3 & \text{ + \text{R}}^1\text{R}^2\text{O} \\
& (\text{R})-\text{DM-BINAP (8 mol%) } \\
& \text{AgOTf (16 mol%)} \\
& (i-\text{Pr}_2\text{NEt (20 mol%)} \\
& \text{R}^2\text{OH (2 equiv)} \\
& \text{THF, } -40 \text{ or } -20 \degree \text{C}
\end{align*}
\]

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