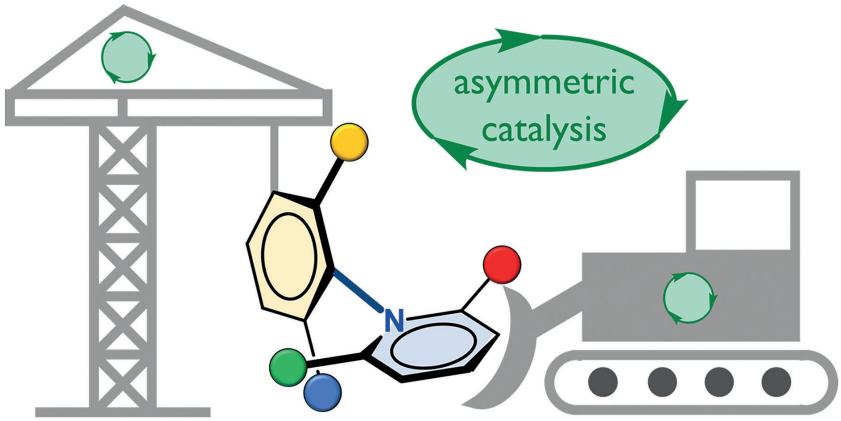
Synthesis

Reviews and Full Papers in Chemical Synthesis

May 3, 2022 • Vol. 54, 2081–2308



Catalytic Enantioselective Synthesis of C–N Atropisomeric Heterobiaryls

J. S. Sweet, P. C. Knipe

9

Thieme

Synthesis

Reviews and Full Papers in Chemical Synthesis

2022
Vol. 54, No. 9
May I

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Cover Image: J. S. Sweet, P. C. Knipe

Synthesis

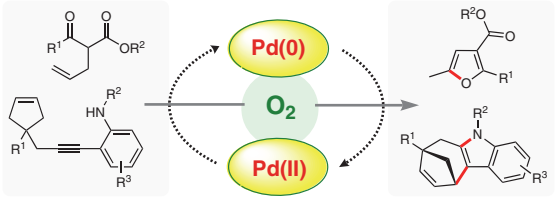
Synthesis **2022**, *54*, 2081–2102
DOI: 10.1055/a-1701-7397

A. A. Barboza
J. A. Dantas
M. O. Costa
A. Chiavegatti
G. A. M. Jardim*
M. A. B. Ferreira*
Federal University of São Carlos – UFSCar, Brazil

Recent Advances in Palladium-Catalyzed Oxidative Couplings in the Synthesis/Functionalization of Cyclic Scaffolds Using Molecular Oxygen as the Sole Oxidant

Review

2081



Synthesis

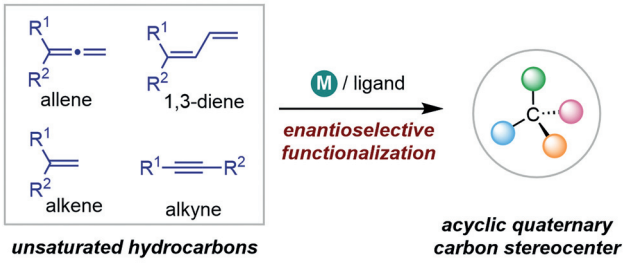
Synthesis **2022**, *54*, 2103–2118
DOI: 10.1055/s-0040-1719899

X. Sun
B.-J. Li*
Tsinghua University, P. R. of China

Acyclic Quaternary Carbon Stereocenters through Transition-Metal-Catalyzed Enantioselective Functionalization of Unsaturated Hydrocarbons

Short Review

2103



Synthesis

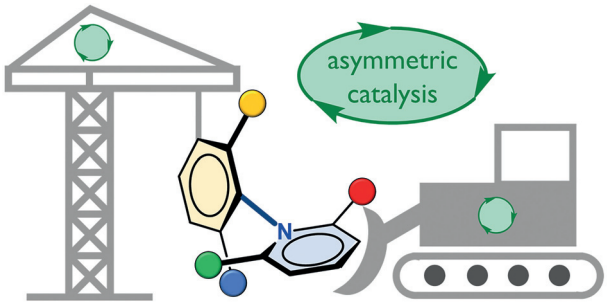
Catalytic Enantioselective Synthesis of C–N Atropisomeric Heterobiaryls

Short Review

2119

Synthesis **2022**, *54*, 2119–2132
DOI: 10.1055/s-0040-1719896

J. S. Sweet
P. C. Knipe*
Queen's University Belfast, UK



Synthesis

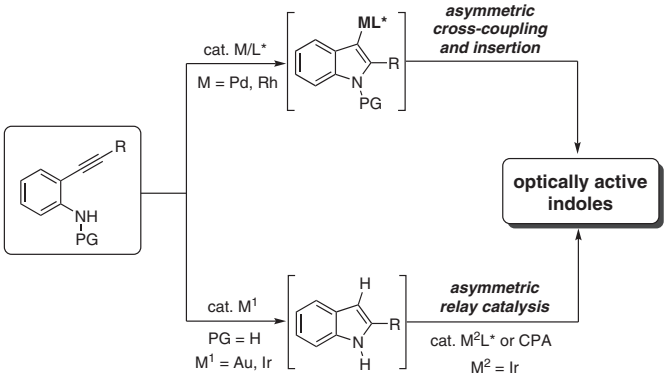
Transition-Metal-Catalyzed Enantioselective Synthesis of Indoles from 2-Alkynylanilines

Short Review

2133

Synthesis **2022**, *54*, 2133–2147
DOI: 10.1055/a-1729-9572

Z.-S. Ye*
J.-C. Li
G. Wang
Dalian University of Technology,
P. R. of China



Synthesis

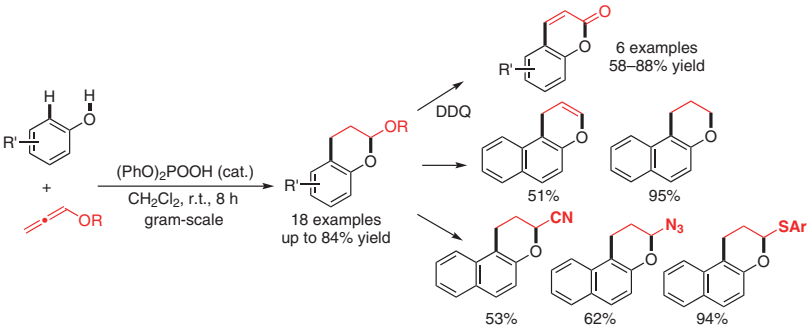
Brønsted Acid Catalyzed Direct Annulation of Alkoxyallenes and Naphthols to Chroman Ketals

Feature

2148

Synthesis **2022**, *54*, 2148–2156
DOI: 10.1055/s-0040-1719892

M. He
J. Zhang
C. Zhang*
H.-Y. Wang
G. Jiang*
Lanzhou Institute of Chemical
Physics (LICP), P. R. of China
Nanjing Tech University,
P. R. of China



Synthesis

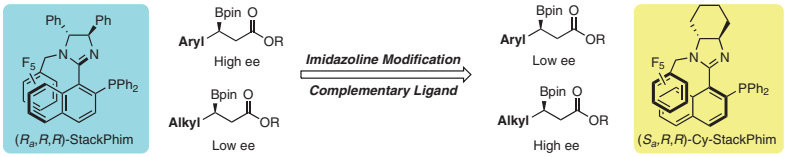
Synthesis **2022**, *54*, 2157–2164
DOI: 10.1055/a-1730-2473

G. Dahiya
K. A. Abboud
A. Aponick*
University of Florida, USA

Tuning StackPhim Ligands: Applications in Enantioselective Borylation and Alkynylation

Feature

2157



Synthesis

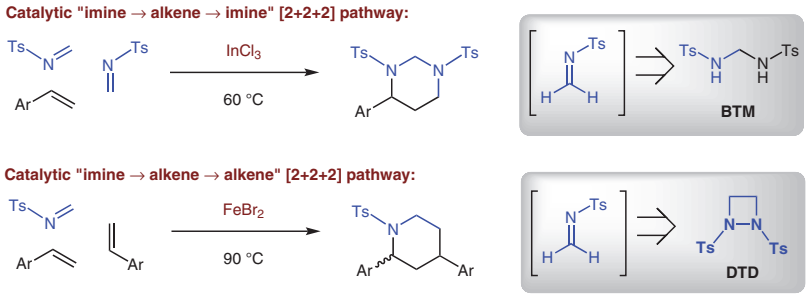
Synthesis **2022**, *54*, 2165–2174
DOI: 10.1055/a-1710-7256

H. H. Chaminda Lakmal
J. Istre
X. Qian
H. Zhou
H. U. Valle
X. Xu*
X. Cui*
Mississippi State University, USA

Catalytic Amidomethylative [2+2+2] Cycloaddition of Formaldimine and Styrenes toward *N*-Heterocycles

Feature

2165



Synthesis

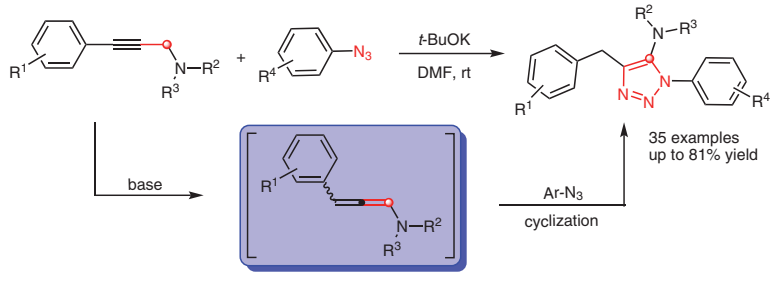
Synthesis **2022**, *54*, 2175–2184
DOI: 10.1055/s-0041-1737336

S. Qiu
W. Chen
D. Li
Y. Chen
Y. Niu
Y. Wu
Y. Lei
L. Wu*
W. He
Hainan Normal University,
P. R. of China

The Use of Propargylamines to Synthesize Amino-1,2,3-triazoles via Cycloaddition of Azides with Allenamines

Paper

2175



Synthesis

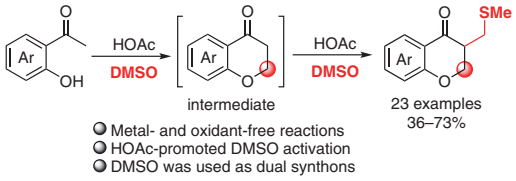
Synthesis **2022**, *54*, 2185–2192
DOI: 10.1055/s-0040-1719880

A. Wang
Y. Feng
S. Li
X. Shi
T.-S. Jiang*
Anhui Agricultural University, P. R. of China

Oxidant-Free Selective Synthesis of Functionalized Chroman-4-ones from *ortho*-Hydroxyacetophenones under HOAc/DMSO Conditions

Paper

2185



Synthesis

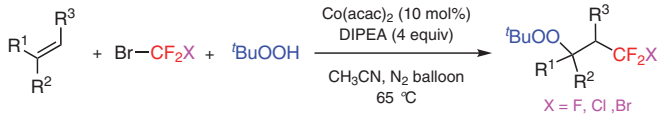
Synthesis **2022**, *54*, 2193–2204
DOI: 10.1055/a-1702-4445

L. Pang
Q. Sun
Z. Huang
S. Li*
Q. Li*
Anhui Agricultural University, P. R. of China
Sun Yat-Sen University, P. R. of China
South China University of Technology, P. R. of China

Cobalt–Tertiary Amine Mediated Peroxy-trifluoromethylation and -halodifluoromethylation of Alkenes with CF_2XBr (X = F, Cl, Br) and *tert*-Butyl Hydroperoxide

Paper

2193



mono-, di-, and trisubstituted alkenes, up to 93% yield

Synthesis

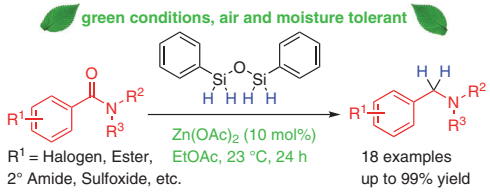
Synthesis **2022**, *54*, 2205–2212
DOI: 10.1055/a-1709-3426

T. A. Hammerstad
P. V. Hegde
K. J. Wang
C. C. Aldrich*
University of Minnesota Twin Cities, USA

Chemoselective Reduction of Tertiary Amides by 1,3-Diphenyldisiloxane (DPDS)

Paper

2205



Synthesis

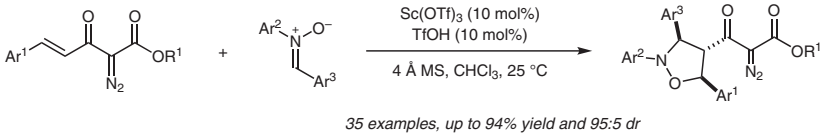
Sc(OTf)$_3$-Catalyzed [3+2]-Cycloaddition of Diazoacetoacetate Enones and *N*-Aryl Nitrones: Diastereoselective Synthesis of Functionalized Isoxazolidines with Three Contiguous Stereogenic Centers

Paper

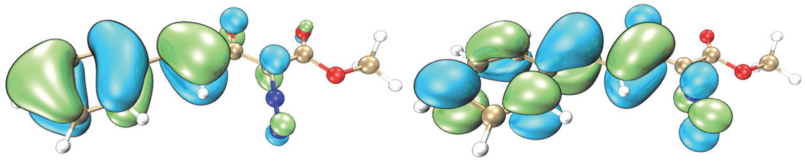
2213

Synthesis **2022**, *54*, 2213–2224
DOI: 10.1055/s-0041-1737804

Y. Zhao
D. Wu
X. Xu*
Wuhan Institute of Technology, P. R. of China



35 examples, up to 94% yield and 95:5 dr



HOMO LUMO

Synthesis

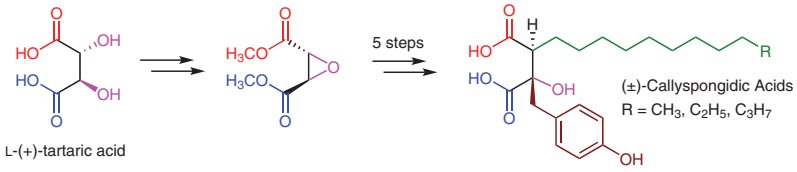
First Total Syntheses of (±)-Callyspongidic Acids and 2-*epi*-(±)-Callyspongidic Acids

Paper

2225

Synthesis **2022**, *54*, 2225–2232
DOI: 10.1055/s-0041-1737805

S. Das
A. Bala
K. Sharma
S. L. Gholap*
Indian Institute of Technology Delhi, India



L-(+)-tartaric acid

Synthesis

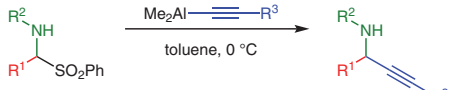
Efficient Synthesis of *N*-Carbamoylpropargylamines from α-Amido Sulfones Using Dimethylalkynylaluminum Reagents

Paper

2233

Synthesis **2022**, *54*, 2233–2241
DOI: 10.1055/s-0041-1737763

J.-H. Lee
S.-H. Lee*
Daegu Catholic University, Korea



R^1 = alkyl, aryl, heteroaryl
R^2 = carbamoyl, acyl, sulfonyl
R^3 = alkyl, aryl

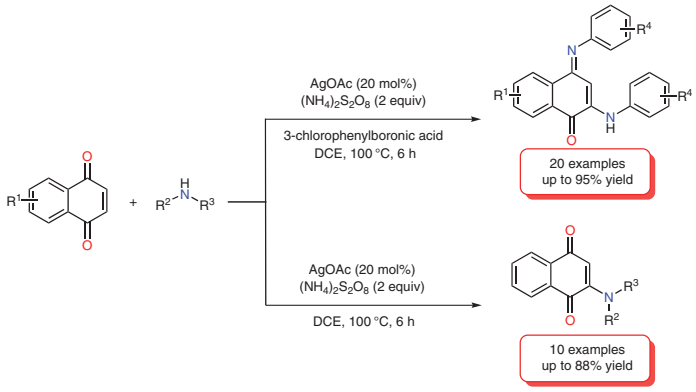
32 examples
51–98%

Synthesis

Silver-Catalyzed One-Pot Biarylamination of Quinones with Arylamines: Access to *N*-Arylamine-Functionalized *p*-Iminoquinone Derivatives

Synthesis **2022**, *54*, 2242–2250
DOI: 10.1055/s-0041-1737340

Y. Dong*
H. Jiang
X.-L. Chen
J.-X. Ye
Q. Zhou
L.-S. Gao
Q.-Q. Luo
Z.-C. Shi
Z.-H. Li*
B. He*
Chengdu Normal University, P. R. China

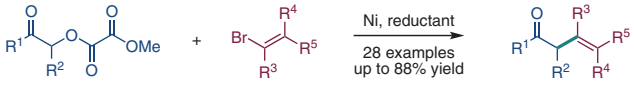


Synthesis

Nickel-Catalyzed Reductive Cross-Coupling of Oxalates Derived from α-Hydroxy Carbonyls with Vinyl Bromides

Synthesis **2022**, *54*, 2251–2257
DOI: 10.1055/s-0040-1719881

C. Ye
W. Tong
F. Wu*
Ningbo University, P. R. of China

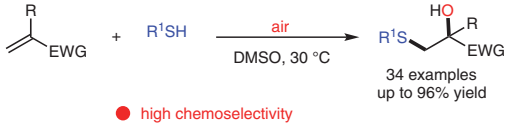


Synthesis

DMSO-Mediated Difunctionalization of Electron-Deficient Olefins to Access β-Hydroxysulfides with High Chemoselectivity

Synthesis **2022**, *54*, 2258–2266
DOI: 10.1055/s-0041-1737341

B. Gao
X. Liu
Q. Yan
R. Yang
T. Jiang
X. Zhang*
Anhui Agricultural University, P. R. of China
Shanghai Institute of Organic Chemistry, P. R. of China



- high chemoselectivity
- broad substrate scope
- excellent functional group tolerance

Synthesis

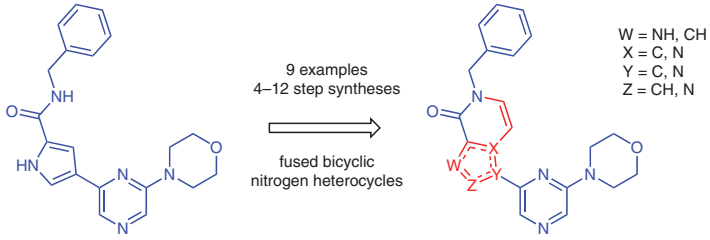
Synthesis **2022**, *54*, 2267–2281
DOI: 10.1055/s-0040-1719873

R. L. Howells*
S. G. Lamont
T. M. McGuire
S. Hughes
R. Borrows
G. Fairley
L. J. L. Feron
R. D. R. Greenwood
E. Lenz
E. Grant
I. Simpson
AstraZeneca R & D, UK

Synthesis of Novel Pyrazine-Substituted 1*H*-Pyrrole-2-carboxamides and Related Tethered Heterocycles

Paper

2267



Synthesis

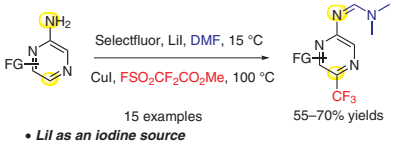
Synthesis **2022**, *54*, 2282–2288
DOI: 10.1055/s-0037-1610792

J. Hu
S. Li
X. Wang
S.-C. Zheng*
X. Zhao*
Tongji University, P. R. of China

Synthesis of 5-Trifluoromethyl-Substituted (*Z*)-*N*,*N*-Dimethyl-*N*′-(pyrazin-2-yl)formimidamides from 2-Aminopyrazines, LiI/Selectfluor, $FSO_2CF_2CO_2Me$ and DMF under Cu Catalysis

Paper

2282



- ***LiI as an iodine source***
- ***DMF as a condensation reagent***
- ***Domino trifluoromethylation and condensation***

Synthesis

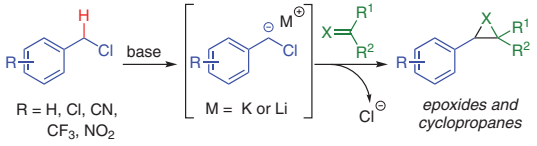
Synthesis **2022**, *54*, 2289–2297
DOI: 10.1055/s-0040-1719895

K. Kisiel
R. Loska*
M. Mąkosza*
Institute of Organic Chemistry, Polish Academy of Sciences, Poland

Synthesis of Aryloxiranes and Arylcyclopropanes via Deprotonation of Benzyl Chlorides

Paper

2289



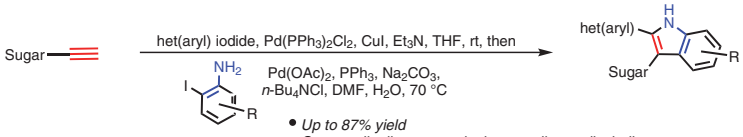
Synthesis

Synthesis **2022**, *54*, 2298–2308
DOI: 10.1055/a-1730-7983

Convenient and General Synthesis of C-3-Substituted Het(aryl)indole *C*-Nucleoside Analogues from Sugar Alkynes

X. Zhou
Z. Cao
Q. Chen
F. Zhang*
Y. Zhao

Zhengzhou University,
P. R. of China



- *Up to 87% yield*
- *Structurally diverse terminal sugar alkynes (including furanosides, pyranosides, and acyclic sugars)*
- *Various hetaryl iodides (including phenyl, thienyl, benzothienyl, and benzofuranyl iodides)*
- *Broad substrate scope (31 examples)*