Synthesis

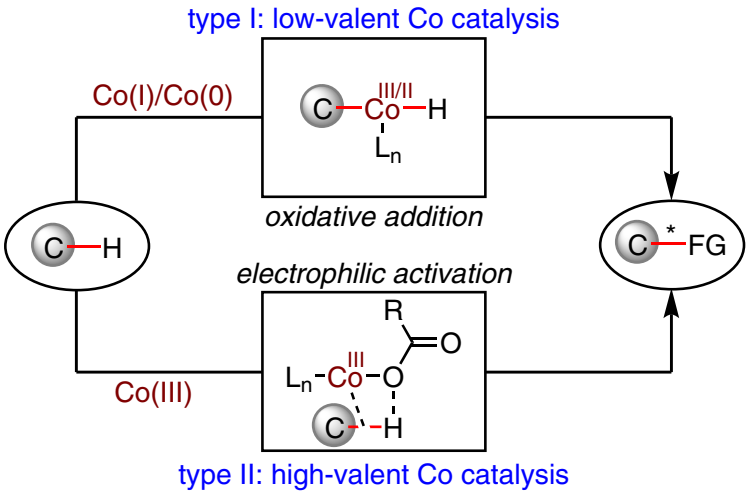
Reviews and Full Papers in Chemical Synthesis

November 2, 2022 • Vol. 54, 4629–4842

Special Topic

Asymmetric C–H Functionalization

Editors: Liu-Zhu Gong, Shigeki Matsunaga, Gong Chen



Enantioselective Cobalt-Catalyzed C–H Functionalization

W. Xu, M. Ye

21

Thieme

Synthesis

Reviews and Full Papers in Chemical Synthesis

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Synthesis

Light-Driven Palladium-Radical Hybrid Species: Mechanistic Aspects and Recent Examples

Review

4629

Synthesis **2022**, *54*, 4629–4645
DOI: 10.1055/a-1898-1816

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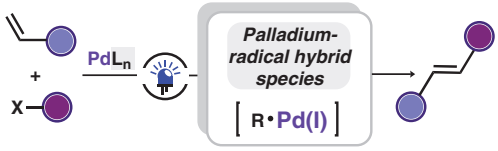

Synthesis

Recent Advances in Transition-Metal-Catalyzed Asymmetric Functionalization of Enamides

Short Review

4646

Synthesis **2022**, *54*, 4646–4660
DOI: 10.1055/a-1892-5473

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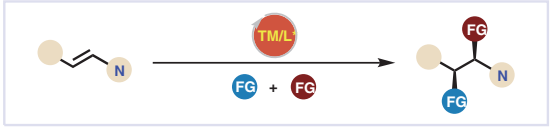

Synthesis

Synthesis **2022**, *54*, 4661–4672
DOI: 10.1055/s-0042-1751367

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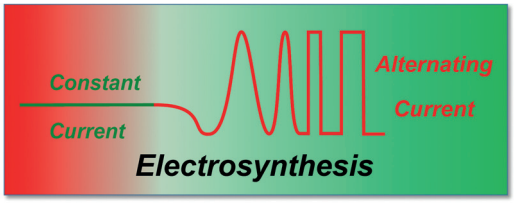
Applications of Alternating Current/Alternating Potential Electrolysis in Organic Synthesis

Short Review

4661



Synthesis

Synthesis **2022**, *54*, 4673–4682
DOI: 10.1055/a-1829-0262

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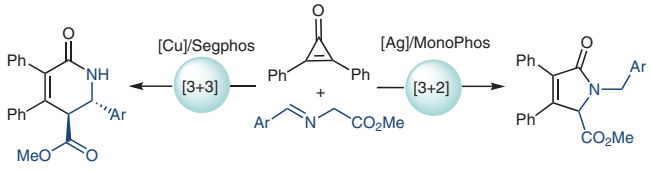
Catalyst-Controlled Chemodivergent [3+3] and [3+2] Formal Cycloadditions of Azomethine Ylides with Diphenylcyclopropenone

Feature

4673



Synthesis

Synthesis **2022**, *54*, 4683–4689
DOI: 10.1055/a-1840-5483

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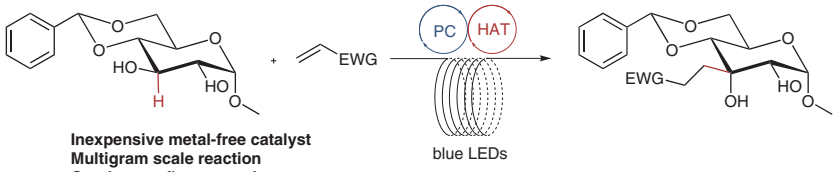
α-C–H Photoalkylation of a Glucose Derivative in Continuous Flow

Feature

OPEN ACCESS

4683



Inexpensive metal-free catalyst
Multigram scale reaction
Continuous flow operation

Synthesis

Preface - Special Topic Asymmetric C–H Functionalization

Preface

4690

Synthesis **2022**, *54*, 4690–4690
DOI: 10.1055/s-0040-1720048

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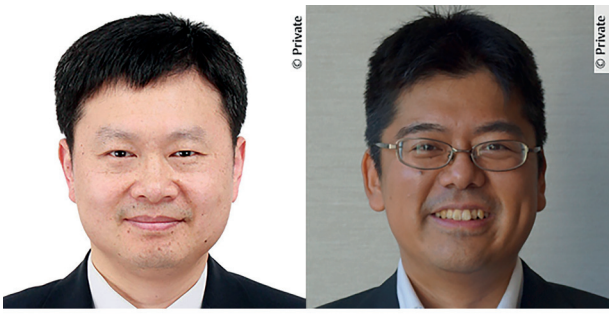

Gong Chen Shigeki Matsunaga

Synthesis

Eight-Step Asymmetric Synthesis of (–)-Berkelic Acid

Special Topic

4691

Synthesis **2022**, *54*, 4691–4691
DOI: 10.1055/a-1799-0459

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R. Chen
L. Cao
Q. Wei
Q. Wang
Q. Zhou*
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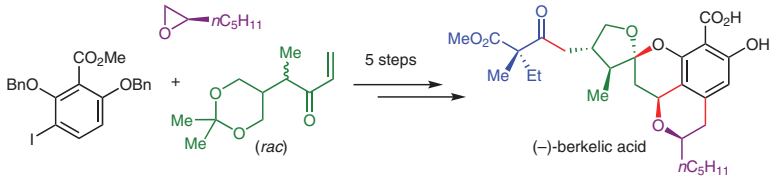
Shanghai Institute of Organic Chemistry, P. R. of China



Synthesis

Ruthenium(II)/Chiral Carboxylic Acid Catalyzed Enantioselective C–H Functionalization of Sulfoximines

Special Topic

4703

Synthesis **2022**, *54*, 4703–4710
DOI: 10.1055/a-1588-0072

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Y. Kato
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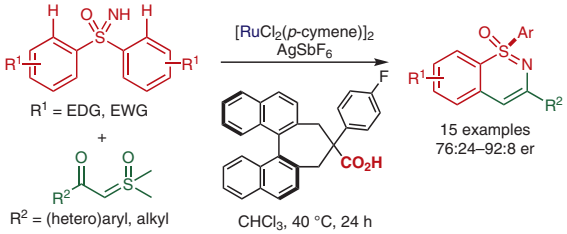

Synthesis

Synthesis **2022**, *54*, 4711–4720
DOI: 10.1055/a-1633-8792

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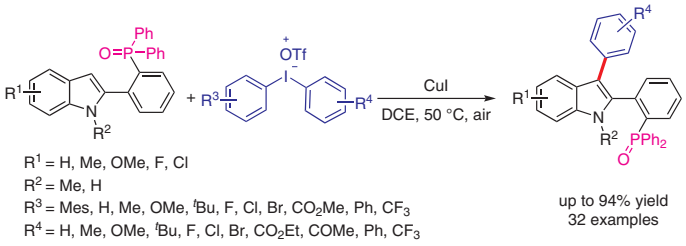
Direct Copper-Catalyzed C-3 Arylation of Diphenylphosphine Oxide Indoles

Special Topic

4711



R^1 = H, Me, OMe, F, Cl
R^2 = Me, H
R^3 = Mes, H, Me, OMe, ^{t}Bu, F, Cl, Br, CO_2Me, Ph, CF_3
R^4 = H, Me, OMe, ^{t}Bu, F, Cl, Br, CO_2Et, COMe, Ph, CF_3

up to 94% yield
32 examples

Synthesis

Synthesis **2022**, *54*, 4721–4726
DOI: 10.1055/a-1668-2075

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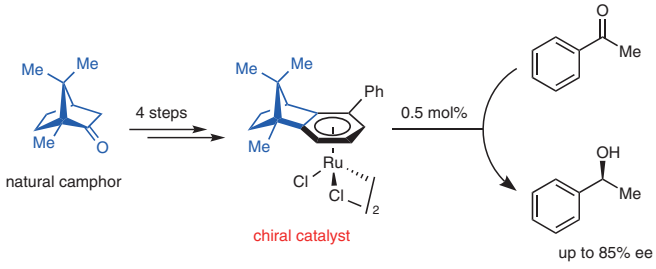
Hangzhou Institute of Advanced
Study, Russian Federation

Synthesis of Ruthenium Catalysts with a Chiral Arene Ligand Derived from Natural Camphor

Special Topic

4721



natural camphor

chiral catalyst

up to 85% ee

Synthesis

Synthesis **2022**, *54*, 4727–4733
DOI: 10.1055/a-1791-7218

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M. Wang
B. Ma*
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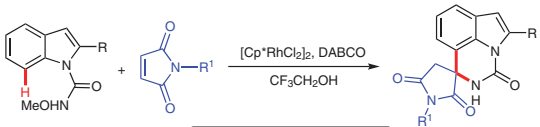
Shanghai Institute of Materia
Medica, P. R. of China
Hangzhou Institute of Advanced
Study, P. R. of China

Rhodium-Catalyzed C–H Activation of Indoles for the Construction of Spiroindole Scaffolds

Special Topic

4727



- *Selective C7-H annulation*
- *Versatile spiro-linker*
- *Gram-scale reaction*

Synthesis

Recent Advances on Transition-Metal-Catalyzed Asymmetric C–H Arylation Reactions

Special Topic

4734

Synthesis **2022**, *54*, 4734–4752
DOI: 10.1055/a-1677-5870

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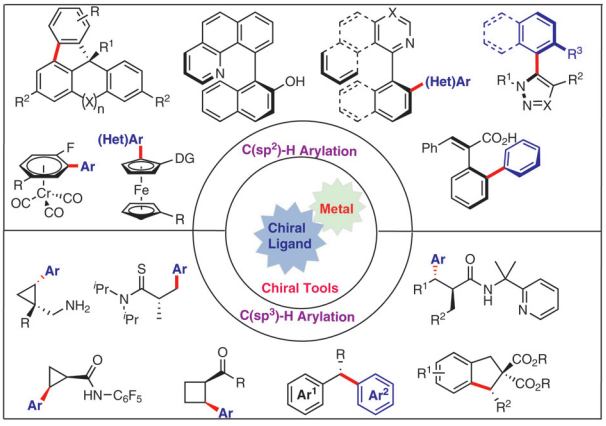

Synthesis

Enantioselective C–H Alkylation of *N*-Arylbenzamides with Vinyl Ethers Catalyzed by an Iridium/Chiral Phosphoramidite–Olefin Complex

Special Topic

4753

Synthesis **2022**, *54*, 4753–4763
DOI: 10.1055/a-1672-6284

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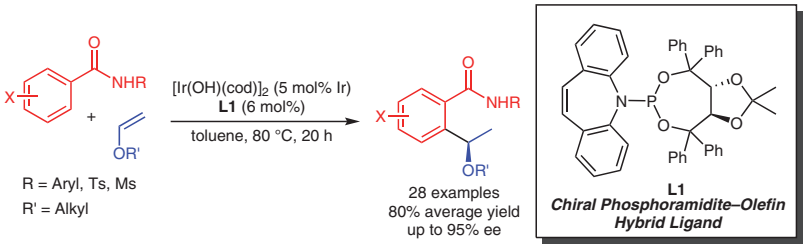

Synthesis

Cationic Iridium/Chiral Bidentate Phosphoramidite Catalyzed Asymmetric Hydroarylation

Special Topic

4764

Synthesis **2022**, *54*, 4764–4772
DOI: 10.1055/a-1683-9455

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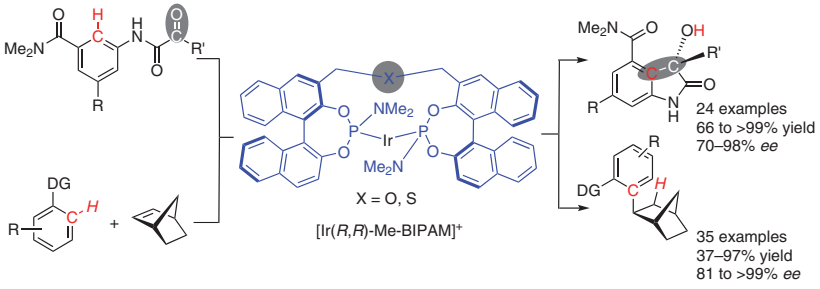

Synthesis

Enantioselective Cobalt-Catalyzed C–H Functionalization

Special Topic

4773

Synthesis **2022**, *54*, 4773–4783
DOI: 10.1055/a-1801-2595

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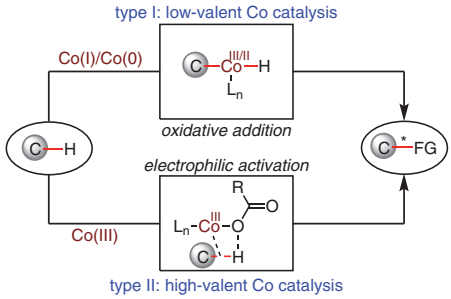

Synthesis

Synthesis of *P*- and *S*-Stereogenic Compounds via Enantioselective C–H Functionalization

Special Topic

4784

Synthesis **2022**, *54*, 4784–4794
DOI: 10.1055/a-1802-6793

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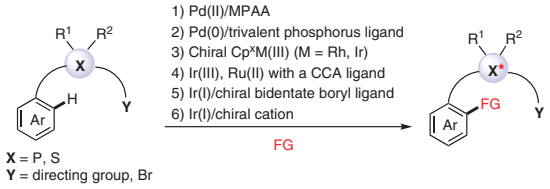

Synthesis

Asymmetric C–H Functionalization Enabled by Pd/Chiral Phosphoric Acid Combined Catalysis

Special Topic

4795

Synthesis **2022**, *54*, 4795–4801
DOI: 10.1055/a-1662-7096

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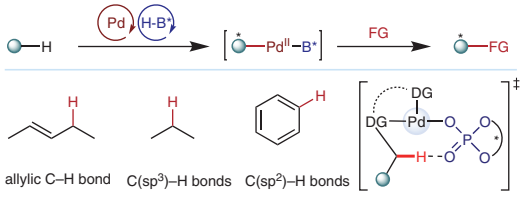

Synthesis

Synthesis of *para*-Quinone Methides via Oxidative Ring-Opening of Spiro-cyclopropanyl-cyclohexadienones

Paper

4802

Synthesis **2022**, *54*, 4802–4809
DOI: 10.1055/a-1878-8272

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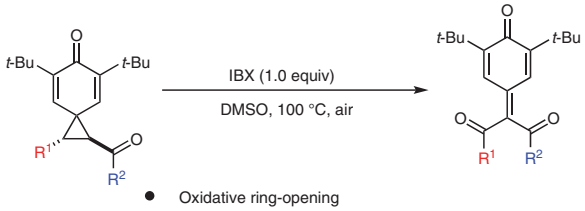

- Oxidative ring-opening
- Broad substrate scope
- 33 examples, up to 90% isolated yield

Synthesis

Synthesis of Sulfonylated Cinchona Alkaloids via Zinc-Mediated Sulfonylation of the *N*-Oxides of the Quinoline Groups

Paper

4810

Synthesis **2022**, *54*, 4810–4817
DOI: 10.1055/a-1900-0293

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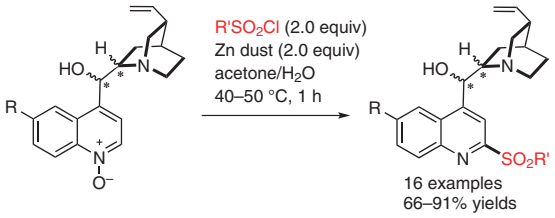

Synthesis

One-Pot Synthesis of 2-Arylquinolines via *in situ* Acid Catalysis

Paper

4818

Synthesis **2022**, *54*, 4818–4826
DOI: 10.1055/a-1889-9354

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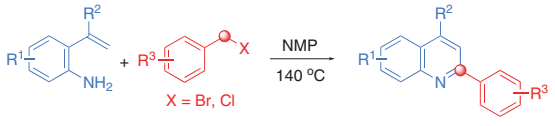

- ✓ Additive free
- ✓ Simple steps
- ✓ Metal-catalyst free
- ✓ 32 examples, up to 96% yield

Synthesis

Synthesis **2022**, *54*, 4827–4833
DOI: 10.1055/a-1894-9073

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P. I. Arvidsson
T. Naicker
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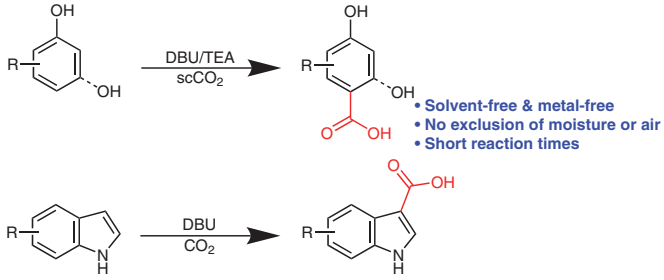
Organic Base-Mediated Carboxylation of (Hetero)aromatic Compounds Using Supercritical Carbon Dioxide ($scCO_2$)

Paper

4827



Synthesis

Synthesis **2022**, *54*, 4834–4842
DOI: 10.1055/a-1891-0797

K. Boujdi
N. El Brahmi
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Solvent/Ligand-Controlled Switchable C3 or C7 C–H Arylations of 1-Methyl-4-nitro-1*H*-indazole

Paper

4834