Synthesis

Reviews and Full Papers in Chemical Synthesis

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Special Issue (Part II)

Bond Activation – in Honor of Prof. Shinji Murai

Editor: Hideki Yorimitsu, Guest Editor: Naoto Chatani

18

Thieme

Synthesis

Reviews and Full Papers in Chemical Synthesis

2021
Vol. 53, No. 18
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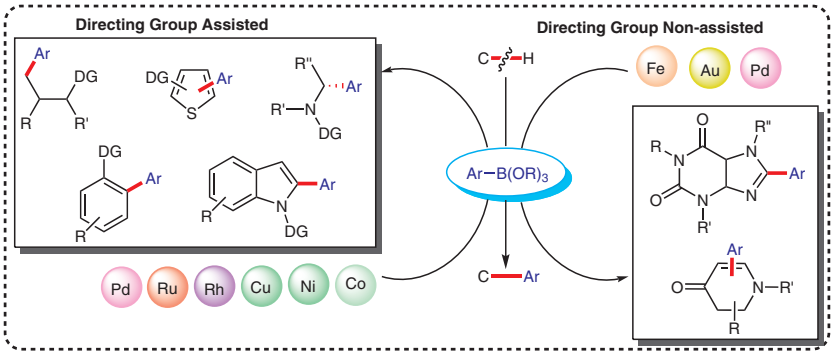

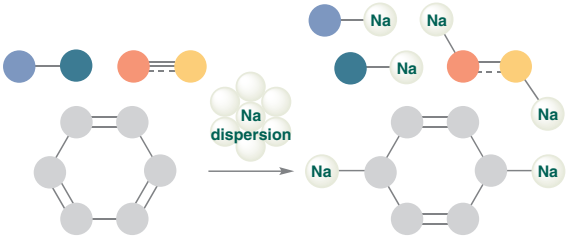

Synthesis

Synthesis **2021**, *53*, 3193–3210
DOI: 10.1055/a-1405-5761

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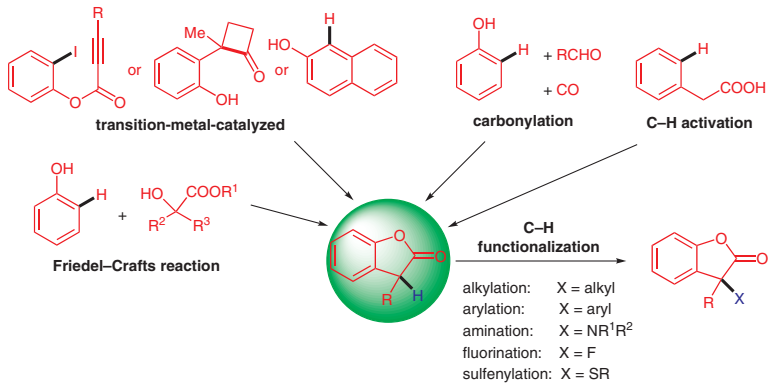
Osaka University, Japan

Recent Advances on Benzofuranones: Synthesis and Transformation via C–H Functionalization

Special Topic



Synthesis

Synthesis **2021**, *53*, 3211–3226
DOI: 10.1055/a-1486-8169

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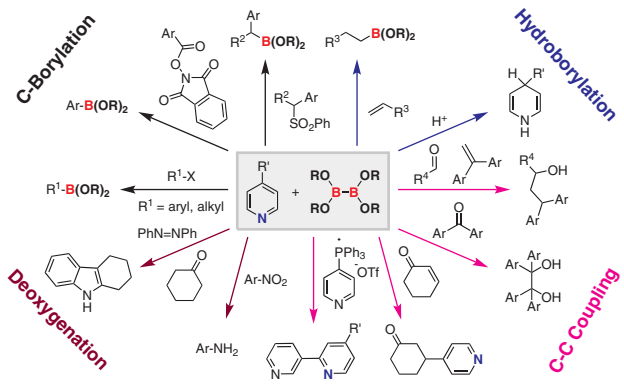
Pyridine-Mediated B–B Bond Activation of $(RO)_2B–B(OR)_2$ for Generating Borylpyridine Anions and Pyridine-Stabilized Boryl Radicals as Useful Boryl Reagents in Organic Synthesis

Special Topic



Synthesis

Synthesis **2021**, *53*, 3227–3234
DOI: 10.1055/a-1478-6118

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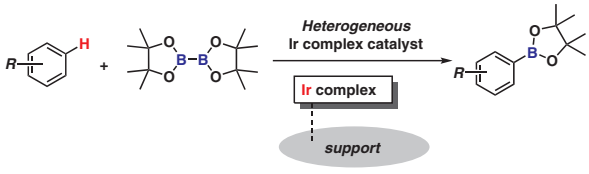
Recent Advances in Heterogeneous Ir Complex Catalysts for Aromatic C–H Borylation

Special Topic



Synthesis

Synthesis **2021**, *53*, 3235–3248
DOI: 10.1055/a-1525-4335

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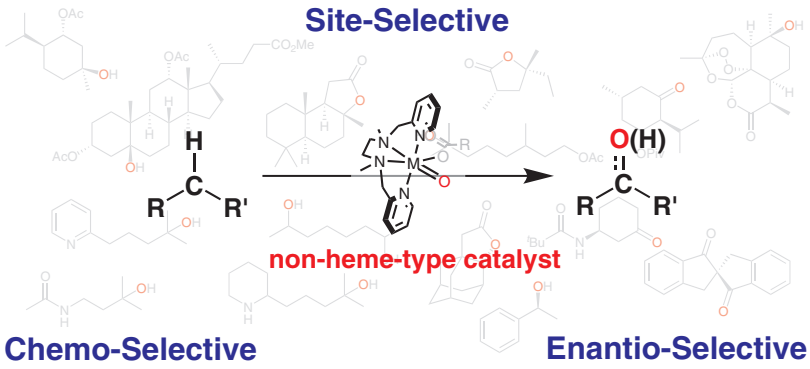
Recent Strategies in Non-Heme-Type Metal Complex-Catalyzed Site-, Chemo-, and Enantioselective C–H Oxygenations

Special Topic



Synthesis

Synthesis **2021**, *53*, 3249–3262
DOI: 10.1055/a-1528-1711

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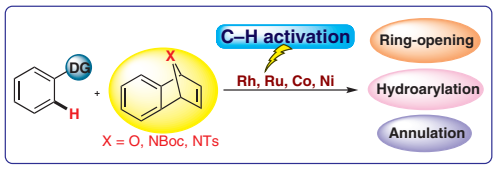
Recent Advances in Transition-Metal-Catalyzed C–H Functionalization Reactions Involving Aza/Oxabicyclic Alkenes

Special Topic



Synthesis

Synthesis **2021**, *53*, 3263–3278
DOI: 10.1055/a-1577-5947

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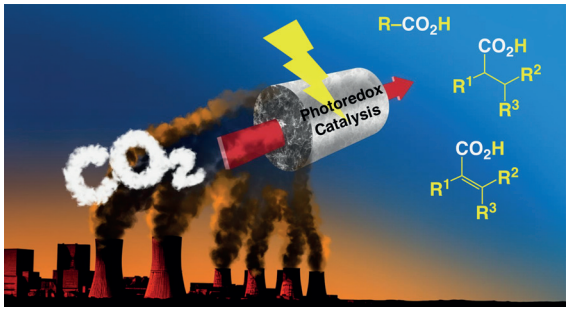
Recent Advances in Light-Driven Carbon–Carbon Bond Formation via Carbon Dioxide Activation

Special Topic



Synthesis

Synthesis **2021**, *53*, 3279–3289
DOI: 10.1055/a-1468-1455

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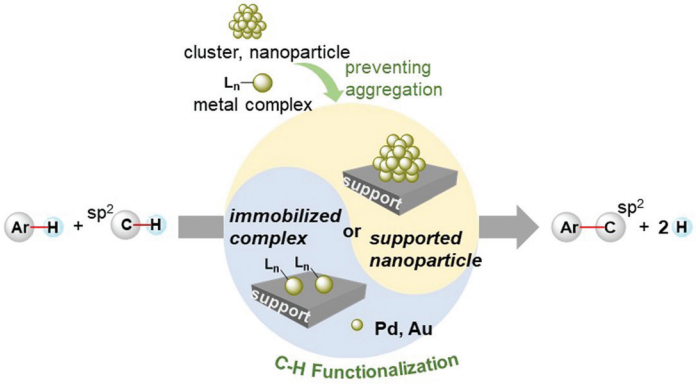
C–H Bond Functionalization Using Pd- and Au-Supported Catalysts with Mechanistic Insights of the Active Species

Special Topic



Synthesis

Synthesis **2021**, *53*, 3290–3298
DOI: 10.1055/a-1521-5800

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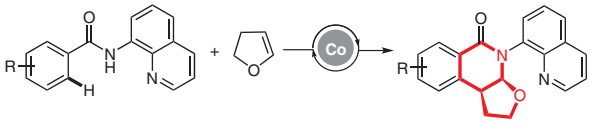
Cobalt-Catalyzed Oxidative [4+2] Annulation of Benzamides with Dihydrofuran: A Facile Route to Tetrahydrofuro[2,3-*c*]isoquinolinones

Special Topic



24 examples
up to 80% yield

- *inexpensive cobalt salt as catalyst*
- *mild reaction conditions*
- *excellent regioselectivity and high diastereoselectivity*
- *good functional group tolerance*

Synthesis

Synthesis **2021**, *53*, 3299–3306
DOI: 10.1055/a-1416-9737

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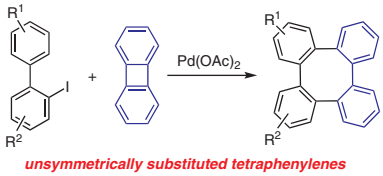
Synthesis of Unsymmetrically Substituted Tetraphenylenes through Palladium-Catalyzed C(sp^2)–H Activation

Special Topic



unsymmetrically substituted tetraphenylenes
simple and efficient
yield up to 99%

Synthesis

Synthesis **2021**, *53*, 3307–3324
DOI: 10.1055/a-1472-0881

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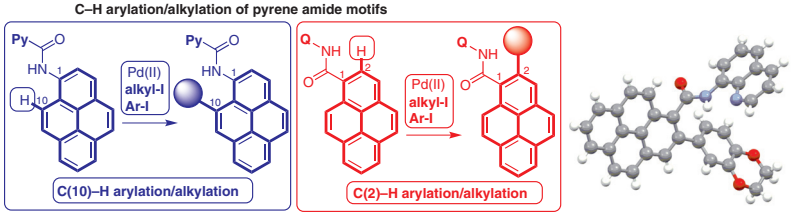
Pd(II)-Catalyzed Directing-Group-Aided C–H Arylation and Alkylation of Pyrene Core: Synthesis of C1,C2- and C1,C10-Disubstituted Pyrene Motifs

Special Topic



Synthesis

Synthesis **2021**, *53*, 3325–3332
DOI: 10.1055/a-1484-1028

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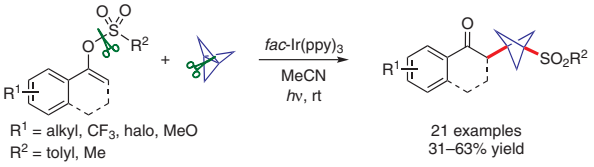
Radical Carbosulfonylation of Propellane: Synthesis of Sulfonyl β-Keto-bicyclo[1,1,1]pentanes

Special Topic



Synthesis

Synthesis **2021**, *53*, 3333–3342
DOI: 10.1055/a-1506-3884

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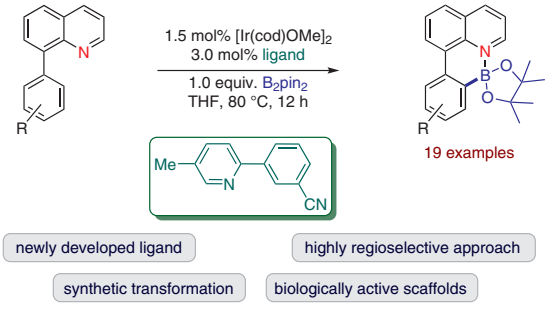
Iridium-Catalyzed Site-Selective Borylation of 8-Arylquinolines

Special Topic



Synthesis

Synthesis **2021**, *53*, 3343–3350
DOI: 10.1055/a-1507-6419

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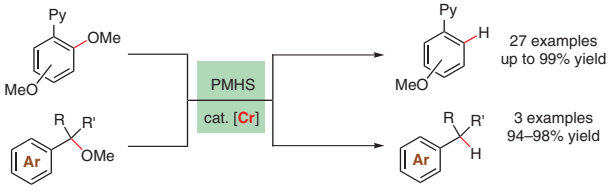
Chromium-Catalyzed Reductive Cleavage of Unactivated Aromatic and Benzylic C–O Bonds

Special Topic



Synthesis

Synthesis **2021**, *53*, 3351–3354
DOI: 10.1055/a-1518-9010

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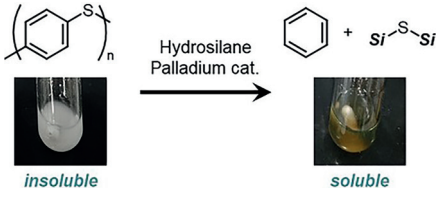
Catalytic Reductive Cleavage of Poly(phenylene sulfide) Using a Hydrosilane

Special Topic



Synthesis

Synthesis **2021**, *53*, 3355–3360
DOI: 10.1055/a-1516-9399

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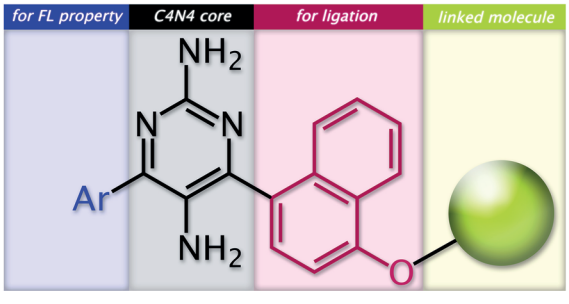
Strategic Synthesis of Asymmetrically Substituted C4N4 Fluorophores

Special Topic



Synthesis

Synthesis **2021**, *53*, 3361–3371
DOI: 10.1055/a-1401-4486

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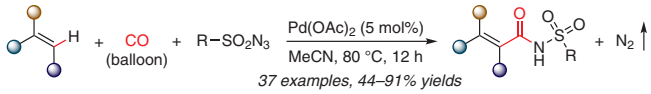
Intermolecular C–H Amidation of Alkenes with Carbon Monoxide and Azides via Tandem Palladium Catalysis

Special Topic



- tandem Pd catalysis
- no *ortho*-directing group
- additive free

Synthesis

Synthesis **2021**, *53*, 3372–3382
DOI: 10.1055/a-1468-8377

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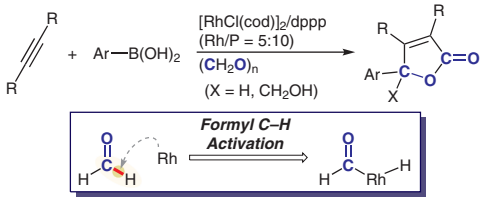
Rhodium(I)-Catalyzed CO-Gas-Free Arylative Dual-Carbonylation of Alkynes with Arylboronic Acids via the Formyl C–H Activation of Formaldehyde

Special Topic



Synthesis

Synthesis **2021**, *53*, 3383–3389
DOI: 10.1055/s-0040-1706040

N. Kimura
S. Katta
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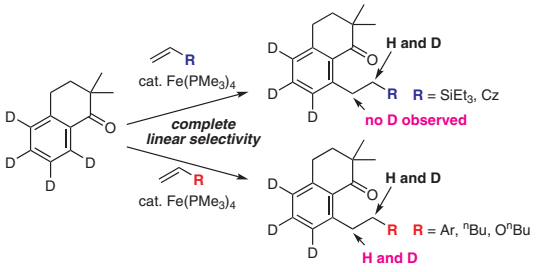
Deuterium-Labeling Studies on the C–H/Olefin Coupling of Aromatic Ketones Catalyzed by $Fe(PMe_3)_4$

Special Topic



Synthesis
Synthesis **2021**, *53*, 3390–3396
DOI: 10.1055/a-1528-1632

Electron-Accepting π-Conjugated Compound Containing Cyano-Substituted Naphthobisthiadiazole as Nonfullerene Acceptor in Organic Solar Cells

Special Topic

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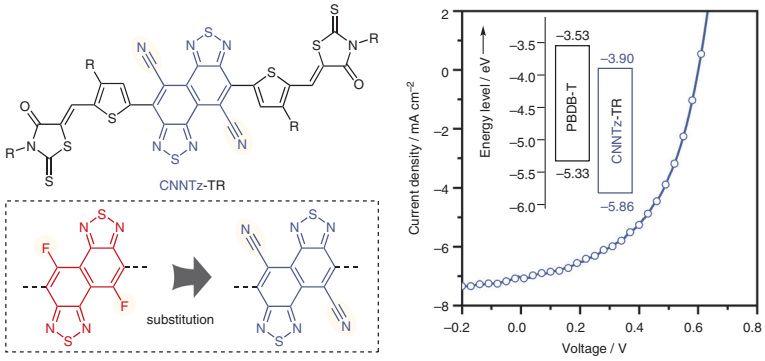

Synthesis
Synthesis **2021**, *53*, 3397–3403
DOI: 10.1055/a-1509-5954

Nickel-Catalyzed Homocoupling of Aryl Ethers with Magnesium Anthracene Reductant

Special Topic

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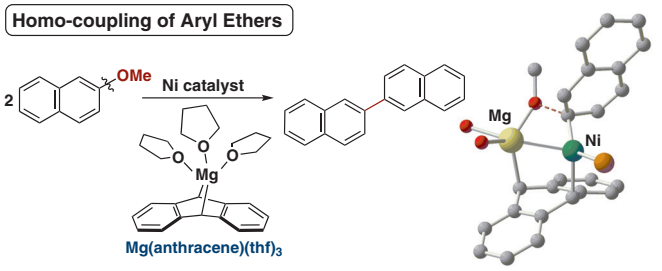

✓ Cooperative actions of Ni-Mg bimetallic system for C–O bond activation

Synthesis
Synthesis **2021**, *53*, 3404–3408
DOI: 10.1055/a-1527-4526

A New Protocol for Catalytic Reduction of Alkyl Chlorides Using an Iridium/Bis(benzimidazol-2′-yl)pyridine Catalyst and Triethylsilane

Special Topic

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