

Synthesis

Reviews and Full Papers in Chemical Synthesis

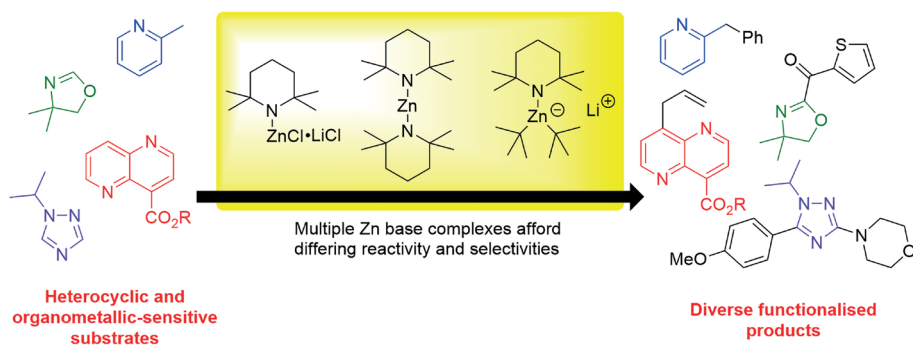
November 2, 2023 • Vol. 55, 3415–3699

Special Topic

C–H Bond Functionalization of Heterocycles

Editor: R. Bhatia

Guest Editors: A. Kumar, T. Punniyamurthy



Zinc-Mediated C–H Metalations in Modern Organic Synthesis

D. K. Wanic, R. Melvin, G. Barker

21

Synthesis

Synthesis **2023**, 55, 3415–3416
DOI: 10.1055/s-0040-1720084

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Editorial for the Special Topic on C–H Bond Functionalization of Heterocycles

Editorial

3415



Synthesis

Synthesis **2023**, 55, 3417–3433
DOI: 10.1055/a-2050-4897

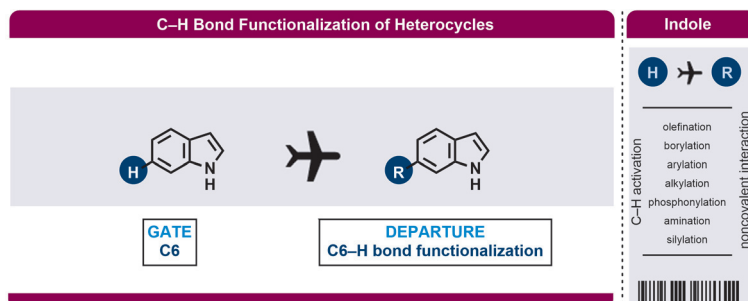
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C6–H Bond Functionalization of Indoles: A New Gate

Special Topic

3417



Synthesis

C–H Bond Silylation of Heteroarenes

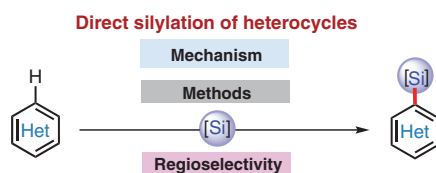
Special Topic

3434

Synthesis 2023, 55, 3434–3453
DOI: 10.1055/a-2110-4581

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Synthesis

Transition-Metal-Catalyzed Directed C8–H Carbon–Carbon Bond Formation in Quinolines and 1,2,3,4-Tetrahydroquinolines

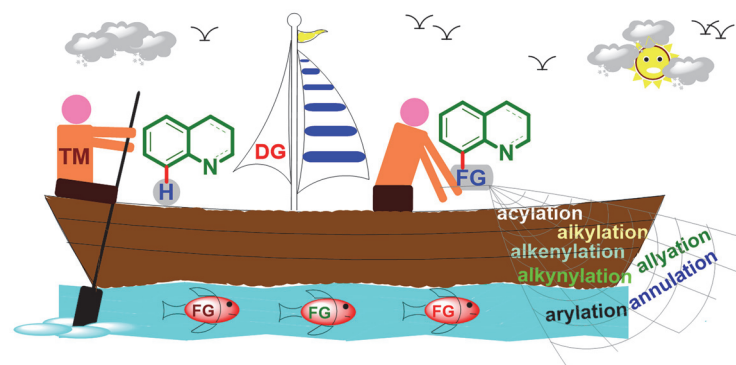
Special Topic

3454

Synthesis 2023, 55, 3454–3469
DOI: 10.1055/a-2058-0695

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Synthesis

Carbon–Carbon Bond Forming Reactions in Diazines via Transition-Metal-Catalyzed C–H Bond Activation

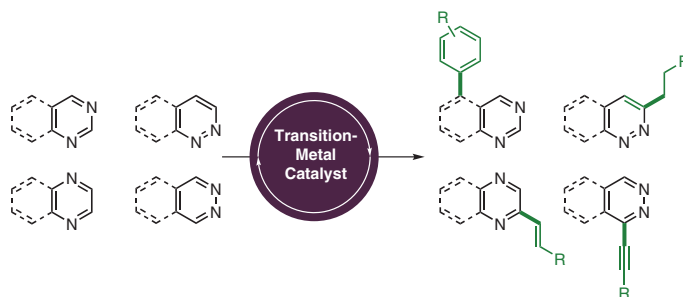
Special Topic

3470

Synthesis 2023, 55, 3470–3486
DOI: 10.1055/a-2134-0307

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Synthesis

Zinc-Mediated C–H Metalations in Modern Organic Synthesis

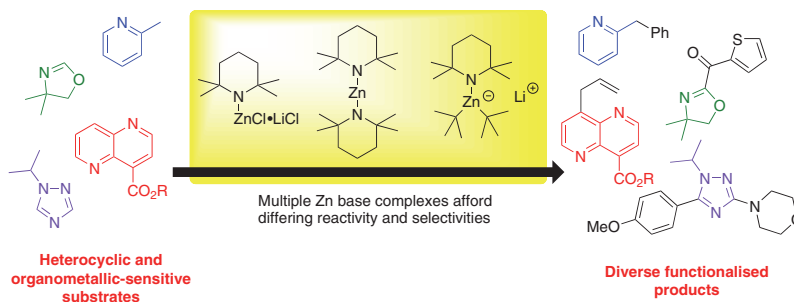
Special Topic

3487

Synthesis 2023, 55, 3487–3501
DOI: 10.1055/a-2155-3423

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Synthesis

Scope and Limitations of the Palladium-Catalyzed Direct 1,2-Diheteroarylation of 1,2-Dihalobenzene Derivatives

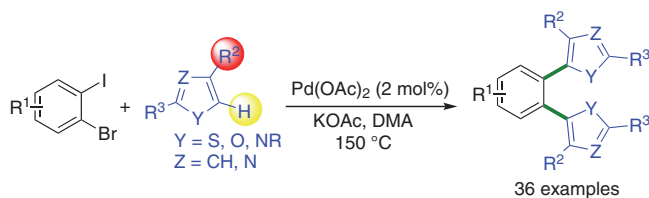
Special Topic

3502

Synthesis 2023, 55, 3502–3514
DOI: 10.1055/a-1981-3213

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Synthesis

Palladium-Catalyzed Regioselective C-Arylation and C,N-Diarylation of N-Aryl-2,3-dihydrophthalazine-1,4-diones Using Diaryliodonium Salts

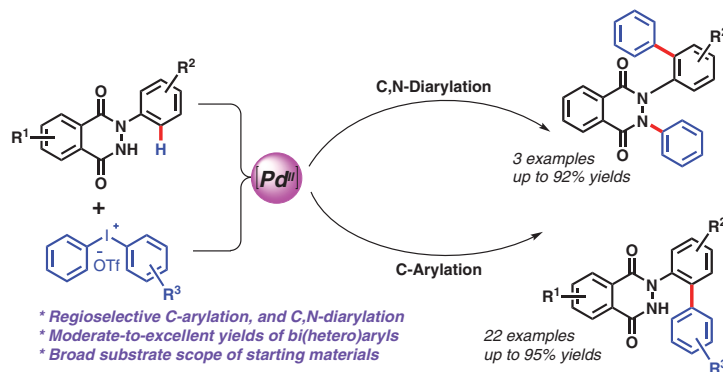
Special Topic

3515

Synthesis 2023, 55, 3515–3525
DOI: 10.1055/a-2048-8030

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Synthesis

Synthesis 2023, 55, 3526–3534
DOI: 10.1055/s-0041-1738433

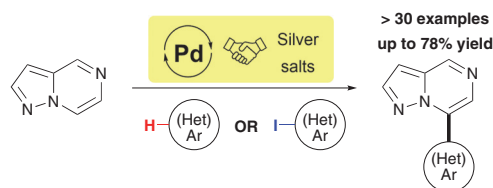
T. V. Nguyen*
A. Levoin
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Palladium-Catalyzed C7–H (Hetero)arylation of Pyrazolo [1,5-*a*]pyrazines with Heteroarenes and Aryl Iodides with the Assistance of Silver Salts

Special Topic

3526



- Silver-assisted oxidative C–H/C–H or C–H/C–I cross-coupling
- Novel bi(hetero)aryl motifs
- Transformations of products

Synthesis

Synthesis 2023, 55, 3535–3567
DOI: 10.1055/a-2056-2363

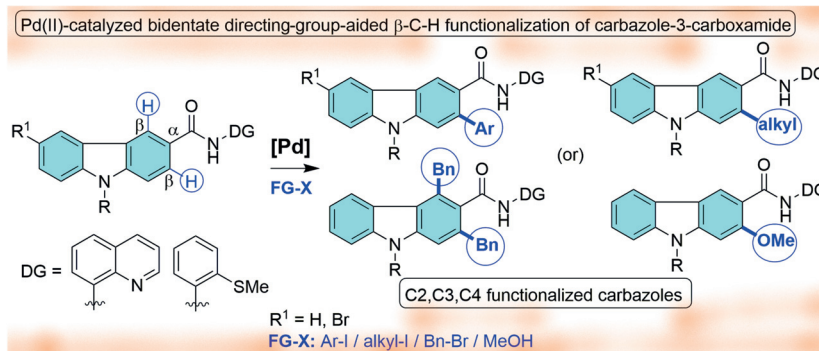
R. Kaur
H. Singh
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Pd(II)-Catalyzed Directing-Group-Aided C–H Arylation, Alkylation, Benzoylation, and Methoxylation of Carbazole-3-carboxamides toward C2,C3,C4-Functionalized Carbazoles

Special Topic

3535



Synthesis

Synthesis 2023, 55, 3568–3574
DOI: 10.1055/a-2092-9012

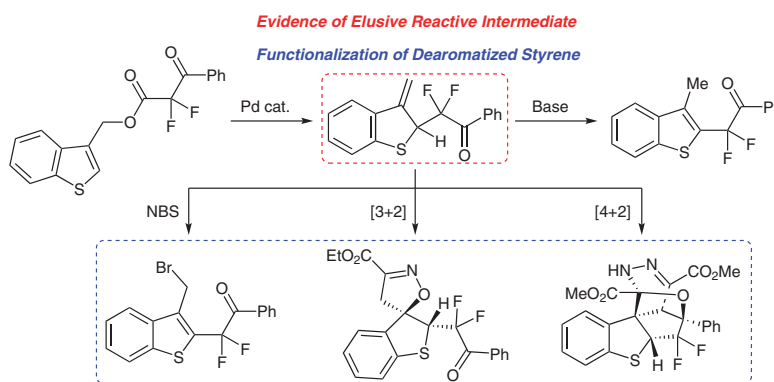
A. J. Intelli
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Palladium-Catalyzed Dearomatization of Benzothiophenes: Isolation and Functionalization of a Discrete Dearomatized Intermediate

Special Topic

3568



Synthesis

Synthesis 2023, 55, 3575–3581
DOI: 10.1055/a-2067-4041

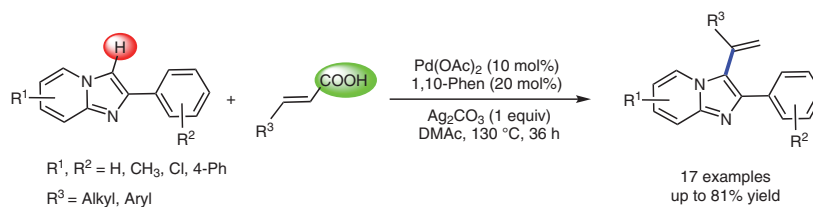
S. Kumar
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Decarboxylative Alkenylation of Imidazo[1,2-a]pyridines Using α,β -Unsaturated Carboxylic Acids via Pd-Catalyzed C–H Functionalization

Special Topic

3575



- C–C bond formation via C–H functionalization
- Decarboxylative alkenylation

Synthesis

Synthesis 2023, 55, 3582–3588
DOI: 10.1055/a-2015-4466

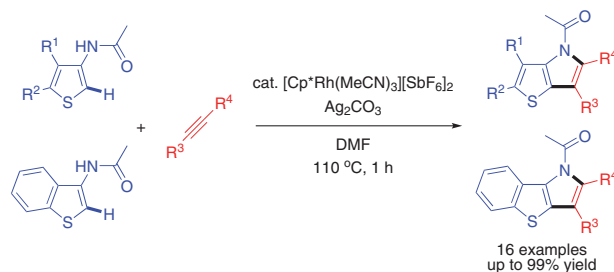
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Construction of Thienopyrroles through Rhodium-Catalyzed Direct Annulation of (Acetylmino)thiophenes with Alkynes

Special Topic

3582



Synthesis

Synthesis 2023, 55, 3589–3599
DOI: 10.1055/a-2018-0965

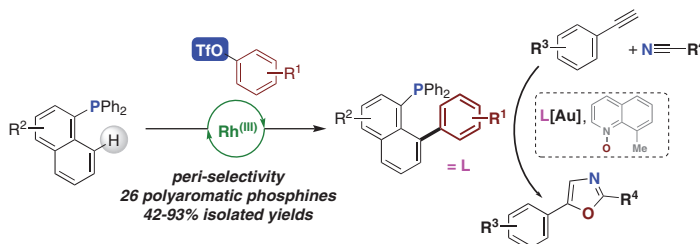
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Aryl Triflates in Phosphorus-Directed Rhodium(III)-Catalyzed C–H Activation

Special Topic

3589



Synthesis

Synthesis 2023, 55, 3600–3609
DOI: 10.1055/a-2116-6734

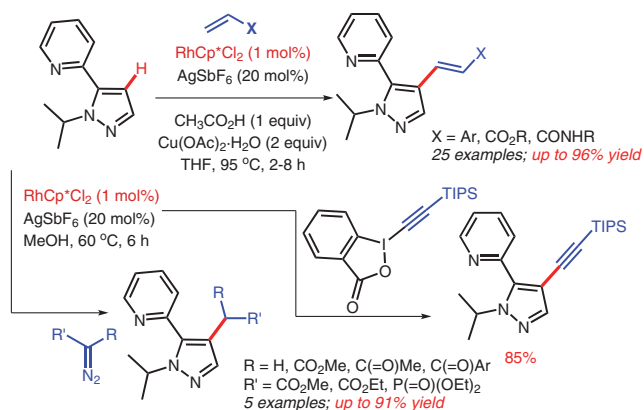
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Rh-Catalyzed C–H Functionalization of the (Pyrazol-5-yl)pyridine Core of GBT-440

Special Topic

3600



Synthesis

Synthesis 2023, 55, 3610–3616
DOI: 10.1055/a-2114-5426

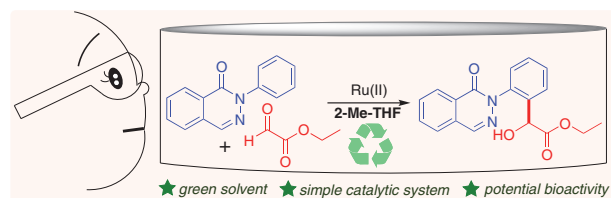
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Sustainable Ru(II)-Catalyzed *ortho*-C(sp²)-H Hydroxyalkylation of Phthalazinones Using Ethyl Glyoxalate: Access to α,α' -Arylcarboxy *sec*-Alcohols

Special Topic

3610



Synthesis

Synthesis 2023, 55, 3617–3624
DOI: 10.1055/a-2002-5931

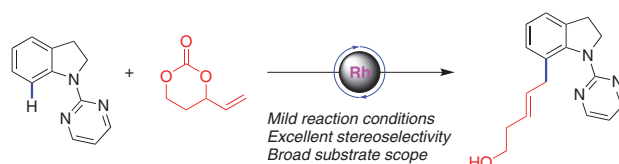
Z. Zhang
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M. Aslam
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Rh(III)-Catalyzed Stereoselective C–H Homoallylation of Indolines with 4-Vinyl-1,3-dioxan-2-ones

Special Topic

3617



Synthesis

Bimetallic Catalyzed Synthesis of 2-Arylindoles

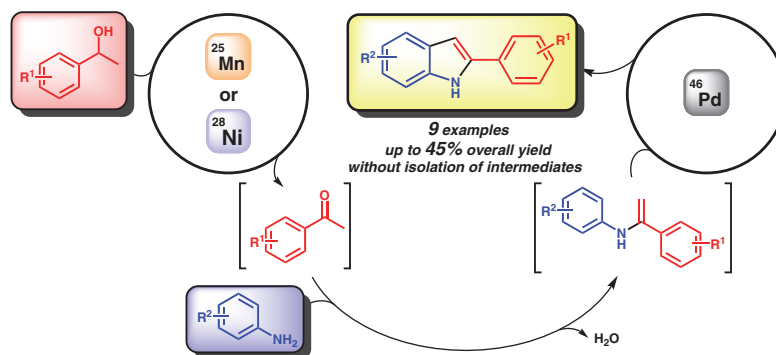
Special Topic

3625

Synthesis 2023, 55, 3625–3631
DOI: 10.1055/a-2035-6420

R. Ferro
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Synthesis

Manganese-Catalyzed *ortho*-Hydroalkylation of Aryl-Substituted *N*-Heteroaromatic Compounds with Maleimides

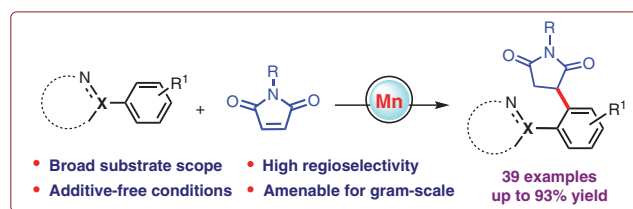
Special Topic

3632

Synthesis 2023, 55, 3632–3643
DOI: 10.1055/a-2066-1131

V. N. Shinde
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Synthesis

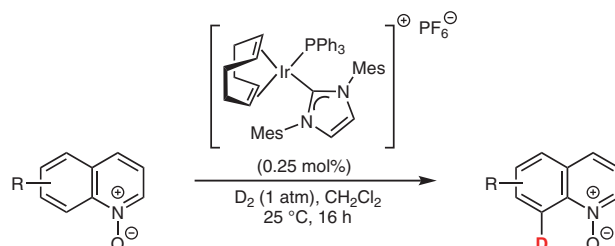
Selective Deuteration of Heterocycle *N*-Oxides via Iridium-Catalysed Hydrogen Isotope Exchange

Special Topic

3644

Synthesis 2023, 55, 3644–3651
DOI: 10.1055/a-2088-4302

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- Very low catalyst loadings
- Mild conditions
- 13 Quinoline examples
- 74–97% Deuterium incorporation
- One-pot labelling/reduction process

Synthesis

Synthesis 2023, 55, 3652–3661
DOI: 10.1055/a-2039-5521

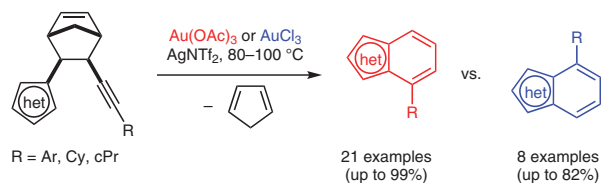
J. E. Jeon
S. Jeong
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Gold-Catalyzed Cyclization of Alkynyl Heteroarenes with a Norbornene Bridge

Special Topic

3652



Synthesis

Synthesis 2023, 55, 3662–3669
DOI: 10.1055/a-2053-9558

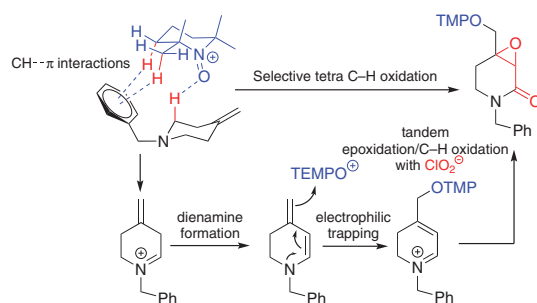
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J. Sandoval-Lira
S. Cruz-Gregorio
J. M. Hernández-Pérez
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On the Reaction Mechanism of the Selective C(sp³)-H Functionalization of *N*-Benzylpiperidines Mediated by TEMPO Oxoammonium Cation

Special Topic

3662



Synthesis

Synthesis 2023, 55, 3670–3684
DOI: 10.1055/a-2054-0482

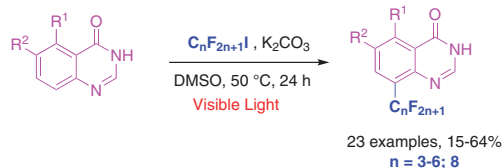
T. Delouche
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Photocatalyst-Free, Visible-Light-Mediated C–H Perfluoroalkylation of Quinazolin-4(3*H*)-ones with perfluoroalkyl Iodides

Special Topic

3670



Synthesis

Synthesis 2023, 55, 3685–3692
DOI: 10.1055/a-2112-2353

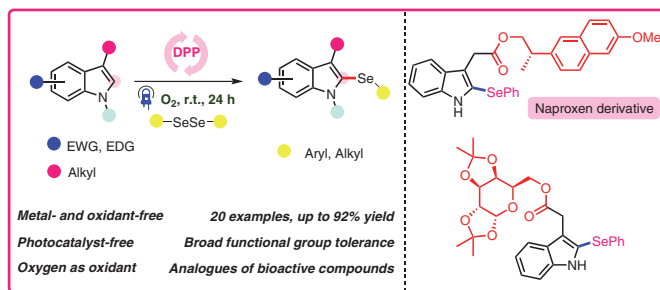
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Visible-Light-Induced Metal-Free Selenation of Tryptamines/3-Substituted Indoles

Special Topic

3685



Synthesis

Synthesis 2023, 55, 3693–3699
DOI: 10.1055/a-2124-5485

P. Sikdar
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Photocatalyst-Free Visible-Light-Promoted C–H Selenylation of Pyrazolo[1,5-*a*]pyrimidines

Special Topic

3693

