

# Synthesis

Reviews and Full Papers in Chemical Synthesis

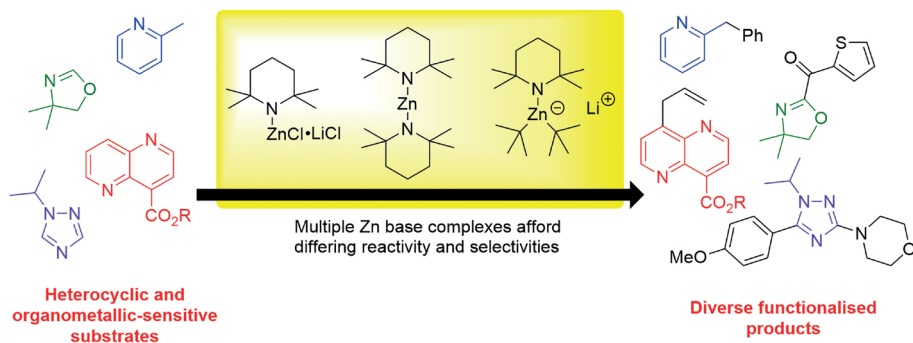
November 2, 2023 • Vol. 55, 3415–3699

## 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

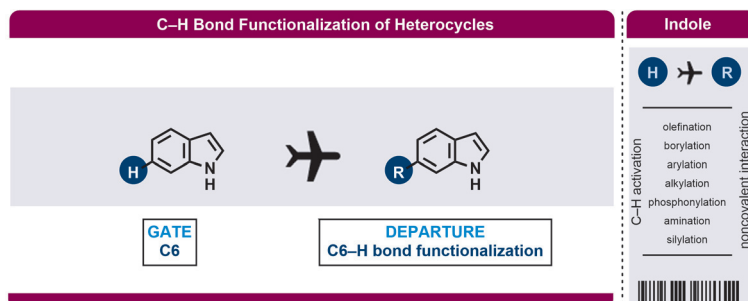
**Y. Taskesenligil**  
**N. Saracoglu\***

Atatürk University, Türkiye

## C6–H Bond Functionalization of Indoles: A New Gate

Special Topic

3417



## Synthesis

## C–H Bond Silylation of Heteroarenes

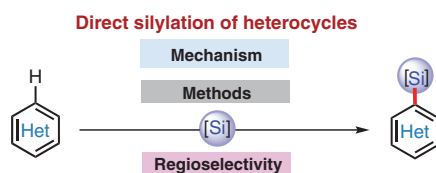
## Special Topic

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

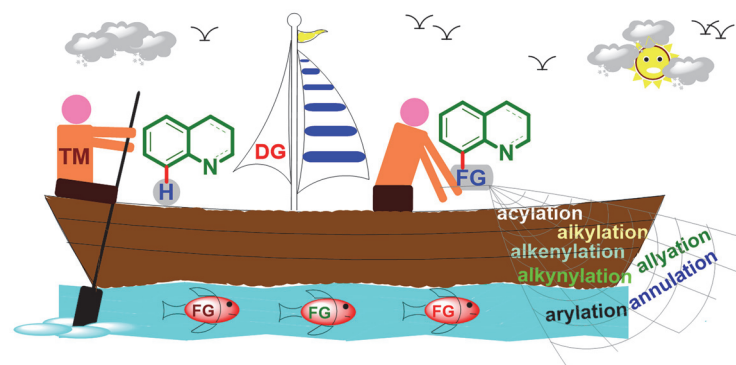
## Special Topic

3454

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

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T. Paul  
S. Mandal  
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M. V. Nanjagowda  
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## Synthesis

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

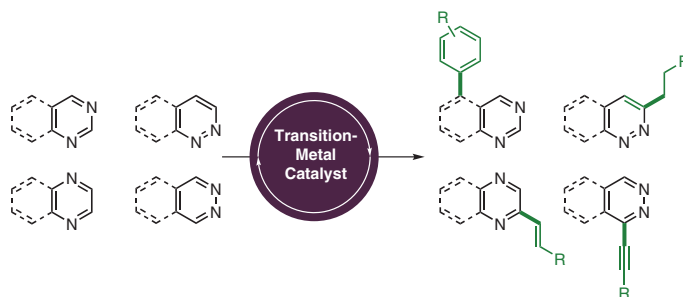
## Special Topic

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

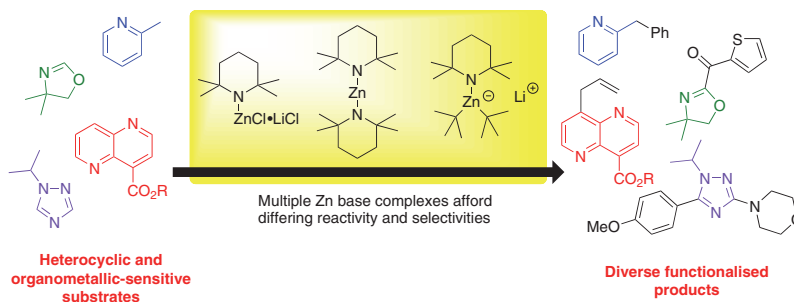
## Special Topic

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

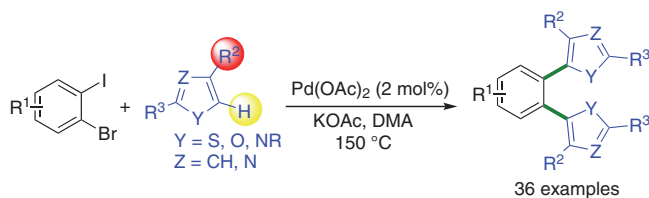
## Special Topic

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

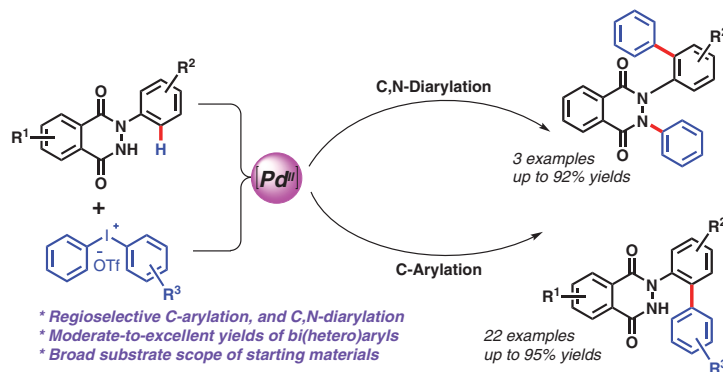
## Special Topic

3515

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

S. Naharwal  
N. D. Kharat  
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## Synthesis

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

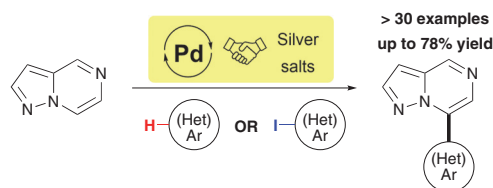
T. V. Nguyen\*  
A. Levoin  
L. Poli

AstraZeneca, Sweden

### 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

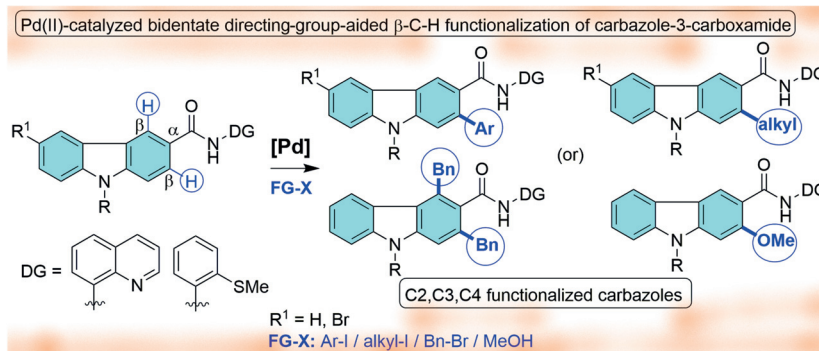
R. Kaur  
H. Singh  
S. A. Babu\*

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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

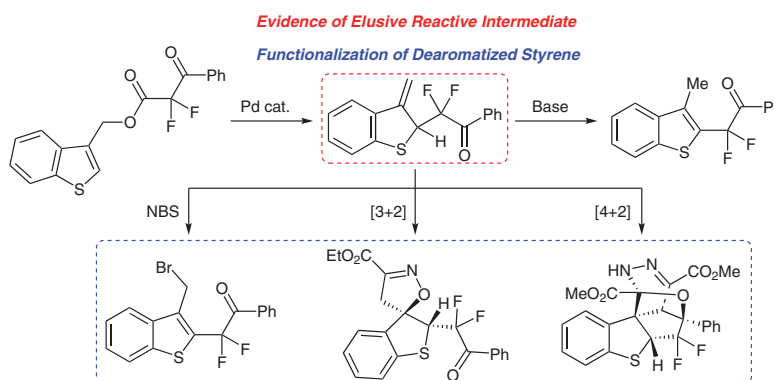
A. J. Intelli  
M. Pal  
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### Palladium-Catalyzed Dearomatization of Benzothiophenes: Isolation and Functionalization of a Discrete Dearomatized Intermediate

## Special Topic

3568



## Synthesis

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

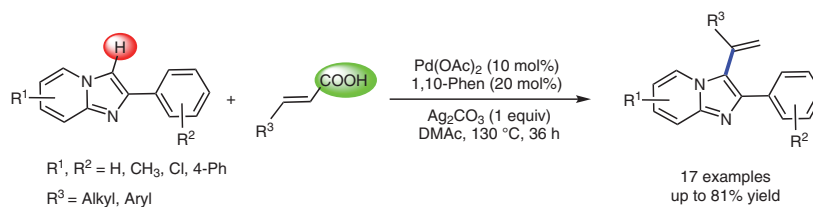
S. Kumar  
N. S. Prabhakar  
K. Kishor  
K. N. Singh\*

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### Decarboxylative Alkenylation of Imidazo[1,2-a]pyridines Using $\alpha,\beta$ -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

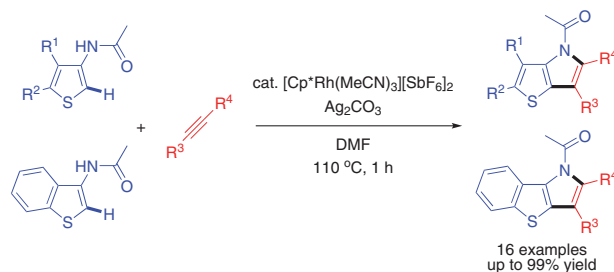
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R. Michikita  
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### Construction of Thienopyrroles through Rhodium-Catalyzed Direct Annulation of (Acetyl-amino)thiophenes with Alkynes

## Special Topic

3582



## Synthesis

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

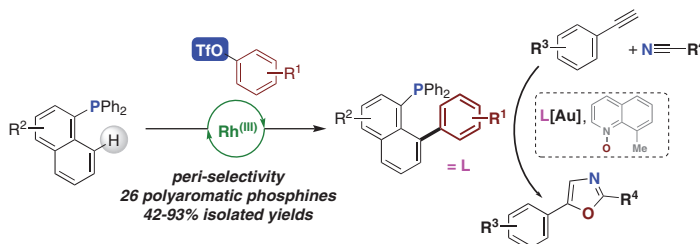
J. Roger\*  
C. Sire  
A. Tsivry  
H. Cattey  
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### Aryl Triflates in Phosphorus-Directed Rhodium(III)-Catalyzed C–H Activation

## Special Topic

3589



## Synthesis

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

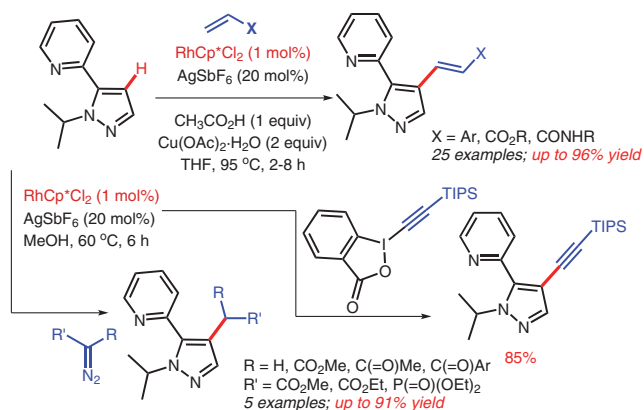
R. G. Kalshetti  
S. V. Halnor  
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## Rh-Catalyzed C–H Functionalization of the (Pyrazol-5-yl)pyridine Core of GBT-440

## Special Topic

3600



## Synthesis

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

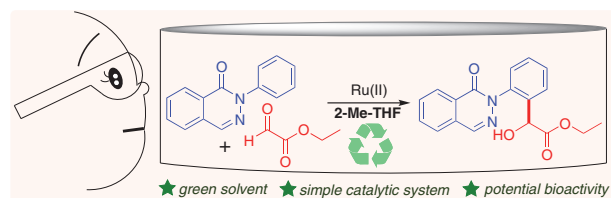
A. Ramkumar  
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Sustainable Ru(II)-Catalyzed *ortho*-C(sp<sup>2</sup>)-H Hydroxyalkylation of Phthalazinones Using Ethyl Glyoxalate: Access to  $\alpha,\alpha'$ -Arylcarboxy *sec*-Alcohols

## Special Topic

3610



## Synthesis

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

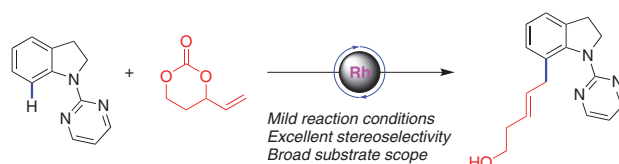
Z. Zhang  
J.-J. Yi  
M. Aslam  
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Jiangxi Normal University,  
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## Rh(III)-Catalyzed Stereoselective C–H Homoallylation of Indolines with 4-Vinyl-1,3-dioxan-2-ones

## Special Topic

3617



Synthesis

Bimetallic Catalyzed Synthesis of 2-Arylindoles

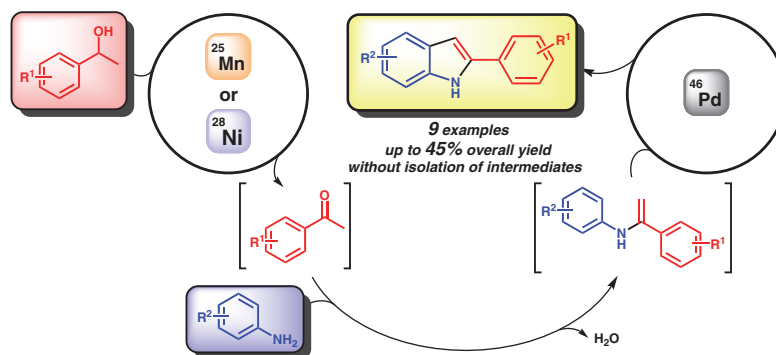
Special Topic

3625

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

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Synthesis

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

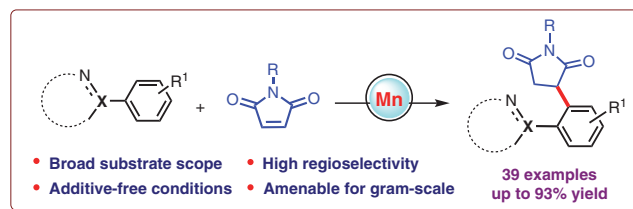
Special Topic

3632

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

V. N. Shinde  
B. Bhawani  
D. S. Nipate  
S. Sonam  
N. Meena  
K. Rangan  
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Synthesis

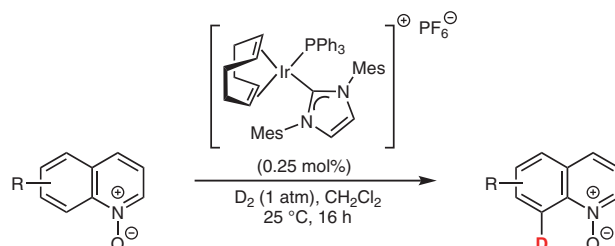
Selective Deuteration of Heterocycle *N*-Oxides via Iridium-Catalysed Hydrogen Isotope Exchange

Special Topic

3644

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

P. K. Owens  
B. I. Smith  
S. Campos  
D. M. Lindsay  
W. J. Kerr\*  
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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

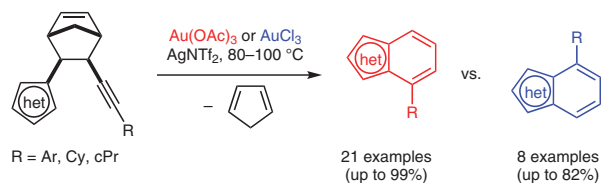
J. E. Jeon  
S. Jeong  
H. Kwak  
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## Gold-Catalyzed Cyclization of Alkynyl Heteroarenes with a Norbornene Bridge

## Special Topic

3652



## Synthesis

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

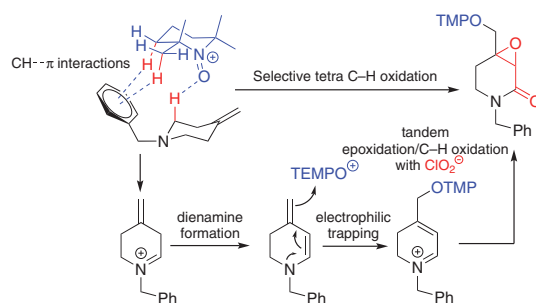
J. Romero-Ibañez  
J. Sandoval-Lira  
S. Cruz-Gregorio  
J. M. Hernández-Pérez  
L. Quintero  
F. Sartillo-Piscil\*

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On the Reaction Mechanism of the Selective C(sp<sup>3</sup>)-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

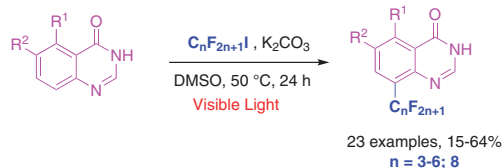
T. Delouche  
A. Gadiry-Diallo  
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Photocatalyst-Free, Visible-Light-Mediated C-H Perfluoroalkylation of Quinazolin-4(3*H*)-ones with perfluoroalkyl Iodides

## Special Topic

3670



## Synthesis

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

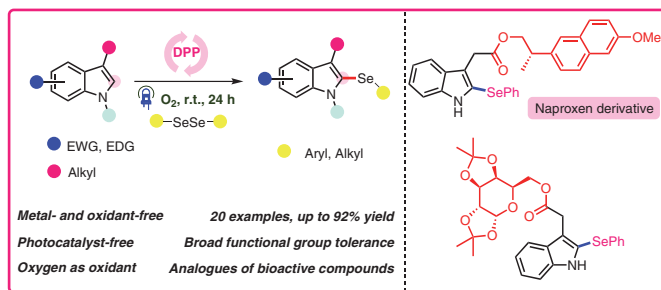
S. Singh  
K. S. Naskar  
A. Kundu  
R. P. Singh\*

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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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S. Paul  
S. Das  
A. Kumar  
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Photocatalyst-Free Visible-Light-Promoted C–H Selenylation of Pyrazolo[1,5-*a*]pyrimidines

## Special Topic

3693

