

# Synthesis

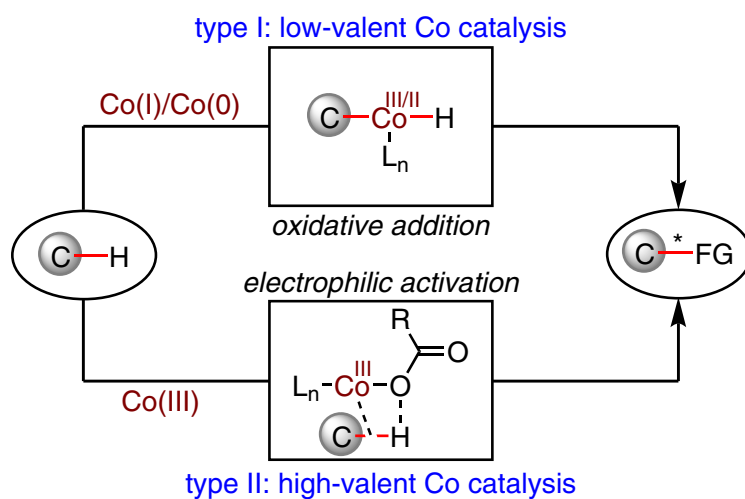
Reviews and Full Papers in Chemical Synthesis

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

## Synthesis

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

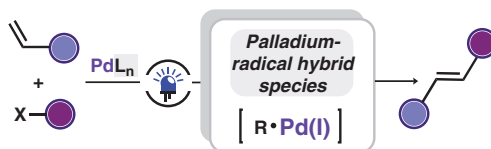
G. A. M. Jardim\*  
J. A. Dantas  
A. A. Barboza  
M. W. Paixão\*  
M. A. B. Ferreira\*

Federal University of São Carlos  
(UFSCar), Brazil

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

Review

4629



## Synthesis

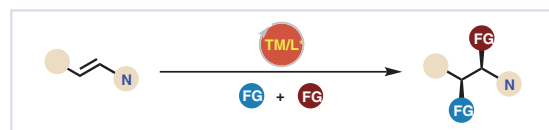
*Synthesis* 2022, 54, 4646–4660  
DOI: 10.1055/a-1892-5473

Y. Xi  
Y. Chen\*  
East China University of Science  
& Technology, P. R. of China

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

Short Review

4646



## Synthesis

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

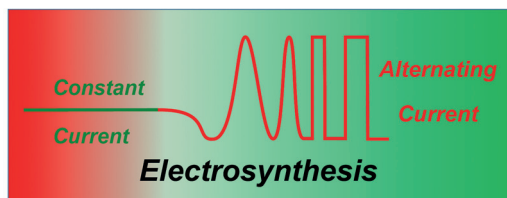
M. Jamshidi  
C. Fastie  
G. Hilt\*

Universität Oldenburg, Germany

## 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

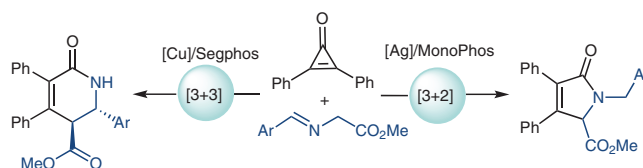
J. Corpas  
A. Ponce  
I. Maclean  
J. Adrio\*  
J. C. Carretero\*

Universidad Autónoma de Madrid, Spain  
Universidad Autónoma de Madrid and Centro de Innovación en Química Avanzada (ORFEO-CINQA), Spain

## 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

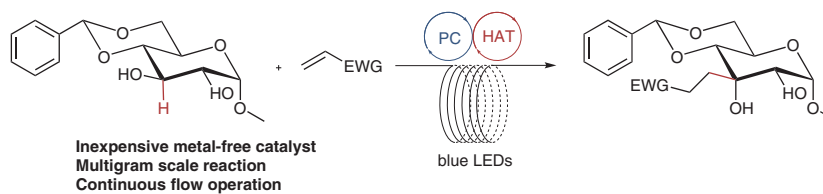
M. L. M. C. Mouthaan  
K. Pouwer  
M. L. G. Borst  
M. D. Witte  
A. J. Minnaard\*

University of Groningen,  
The Netherlands

 $\alpha$ -C–H Photoalkylation of a Glucose Derivative in Continuous Flow

## Feature

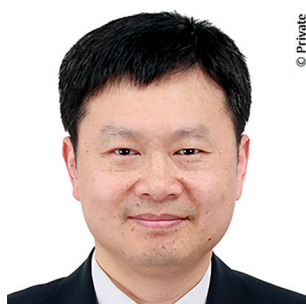
OPEN ACCESS 4683



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

**G. Chen**  
**S. Matsunaga**

Nankai University, P. R. of China  
Hokkaido University, Japan



Gong Chen



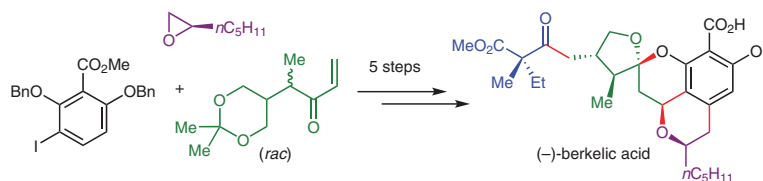
Shigeki Matsunaga

4690

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

**Z. Yang**  
**H.-G. Cheng\***  
**R. Chen**  
**L. Cao**  
**Q. Wei**  
**Q. Wang**  
**Q. Zhou\***

Wuhan University, P. R. of China  
Shanghai Institute of Organic  
Chemistry, P. R. of China

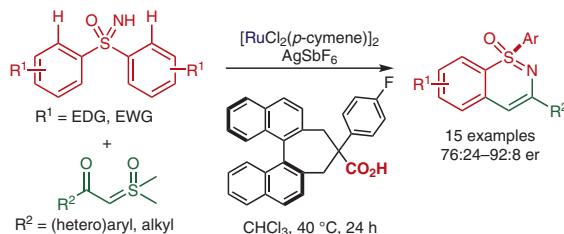


4691

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

**L.-T. Huang**  
**Y. Hirata**  
**Y. Kato**  
**L. Lin**  
**M. Kojima**  
**T. Yoshino\***  
**S. Matsunaga\***

Hokkaido University, Japan



4703

## Synthesis

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

X.-L. Huang

C. Li

J. Wang

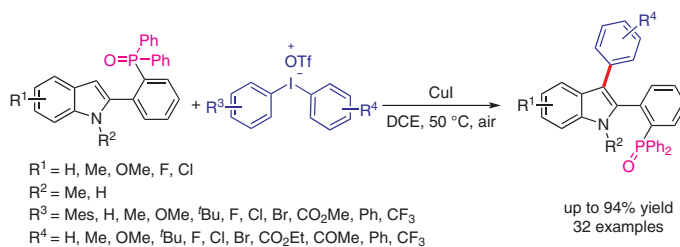
S.-D. Yang\*

Lanzhou University,  
P. R. of China  
Lanzhou Institute of Chemical  
Physics, P. R. of China

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

## Special Topic

4711



## Synthesis

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

R. A. Pototskiy

M. A. Boym

Y. V. Nelyubina

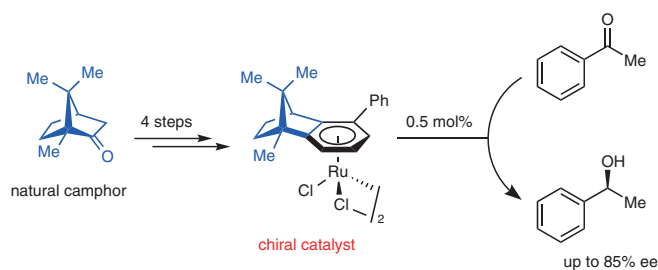
D. S. Perekalin\*

A. N. Nesmeyanov Institute of  
Organoelement Compounds,  
Russian Federation  
Shanghai Institute of Materia  
Medica, Russian Federation  
Hangzhou Institute of Advanced  
Study, Russian Federation

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

## Special Topic

4721



## Synthesis

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

H. Wang

M. Wang

B. Ma\*

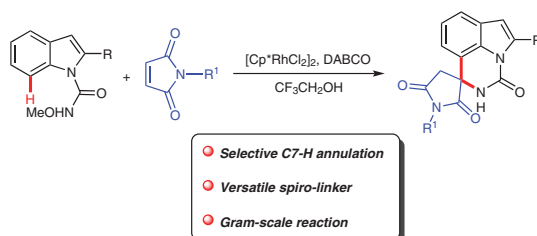
H.-X. Dai\*

Nanjing University of Chinese  
Medicine, P. R. of China  
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



## Synthesis

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

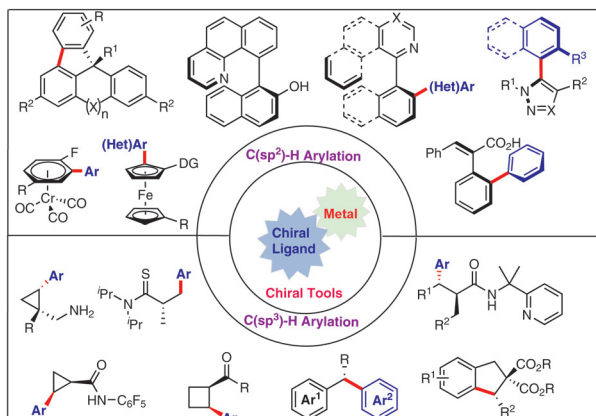
M. Li  
J. Wang\*

Southern University of Science  
and Technology, P. R. of China

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

## Special Topic

4734



## Synthesis

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

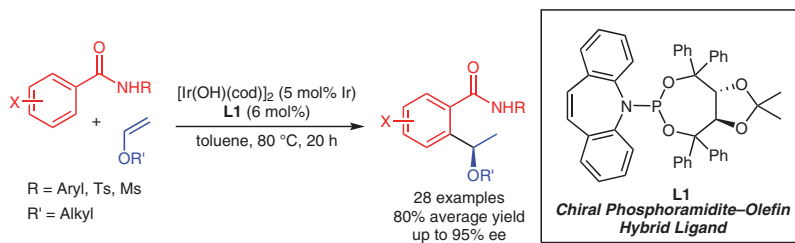
K. Murakami  
K. Sakamoto  
T. Nishimura\*

Osaka City University, Japan

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

## Special Topic

4753



## Synthesis

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

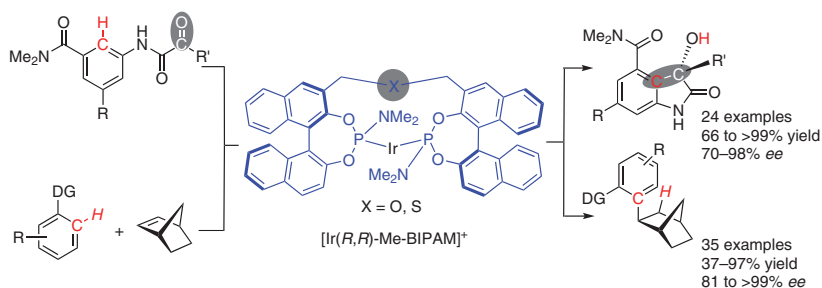
T. Shirai  
Y. Yamamoto\*

Hokkaido University, Japan

## Cationic Iridium/Chiral Bidentate Phosphoramidite Catalyzed Asymmetric Hydroarylation

## Special Topic

4764

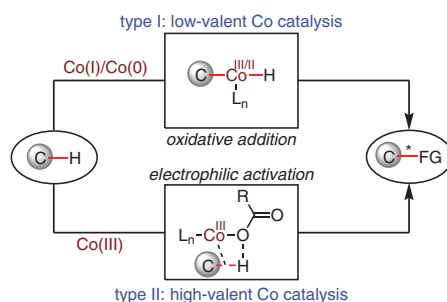


Synthesis 2022, 54, 4773–4783  
DOI: 10.1055/a-1801-2595

W. Xu  
M. Ye\*

Nankai University, P. R. of China  
Haihe Laboratory of Sustainable  
Chemical Transformations,  
P. R. of China

4773

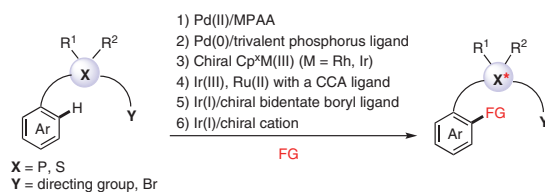


Synthesis 2022, 54, 4784–4794  
DOI: 10.1055/a-1802-6793

P.-F. Qian  
J.-Y. Li  
T. Zhou\*  
B.-F. Shi\*

Zhejiang University,  
P. R. of China  
Zhengzhou University,  
P. R. of China  
Henan Normal University,  
P. R. of China

4784

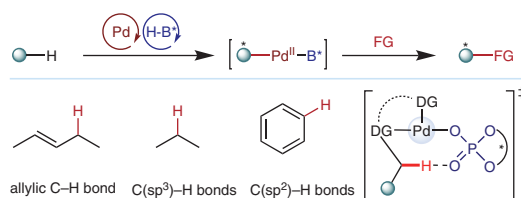


Synthesis 2022, 54, 4795–4801  
DOI: 10.1055/a-1662-7096

P.-S. Wang  
L.-Z. Gong\*

University of Science and Tech-  
nology of China, P. R. of China  
Center for Excellence in Molecu-  
lar Synthesis of Chinese Acade-  
my of Sciences, P. R. of China

4795



Synthesis

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

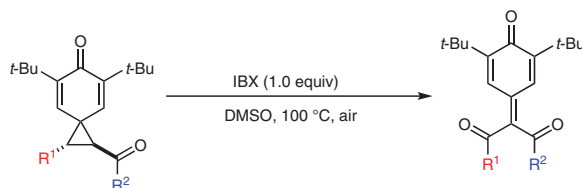
Paper

4802

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

C. Cui  
J. Wu\*  
X. Song\*  
M. Li\*

Zhengzhou University,  
P. R. of China  
Medical School of Huanghe S & T  
University, P. R. of China



- 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

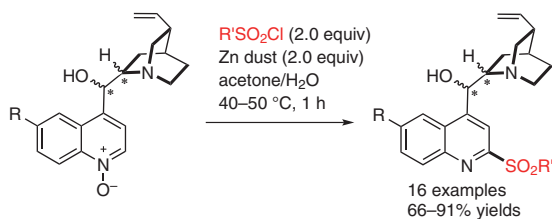
Paper

4810

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

J. Zhou  
C.-Y. Gu  
F.-S. Han\*

Changchun Institute of Applied  
Chemistry, P. R. of China  
University of Science and Tech-  
nology of China, P. R. of China



16 examples  
66–91% yields

Synthesis

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

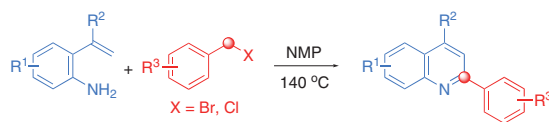
Paper

4818

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

Q. Han  
S. Li  
Z. Cai  
C. Ding  
L. Feng\*  
C. Ma\*

Shandong University,  
P. R. of China



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



## Synthesis

Organic Base-Mediated Carboxylation of (Hetero)aromatic Compounds Using Supercritical Carbon Dioxide (scCO<sub>2</sub>)

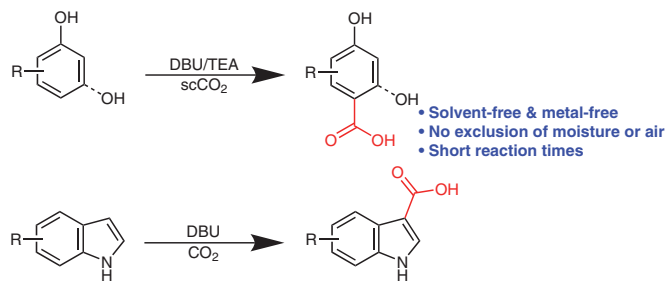
Paper

4827

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

L. C. Chetty  
H. G. Kruger  
P. I. Arvidsson  
T. Naicker  
T. Govender\*

University of Zululand,  
South Africa



## Synthesis

Solvent/Ligand-Controlled Switchable C3 or C7 C–H Arylations of 1-Methyl-4-nitro-1*H*-indazole

Paper

4834

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

K. Boujdi  
N. El Brahmi  
S. Collet  
D. Dubreuil  
M. Mathé-Allainmat  
M. Akssira  
G. Guillaumet  
J. Lebreton  
S. El Kazzouli\*

EEuromed University of Fes  
(UEMF), Morocco

