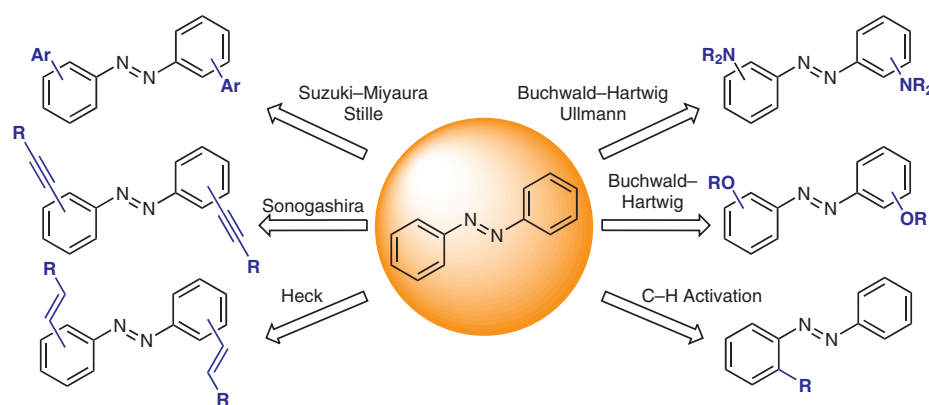


# Synthesis

Reviews and Full Papers in Chemical Synthesis

April 1, 2021 • Vol. 53, 1181–1378



Modification of Azobenzenes by Cross-Coupling Reactions

*M. Walther, W. Kipke, S. Schultzke, S. Ghosh, A. Staubitz*

7

## Synthesis

*Synthesis* 2021, 53, 1181–1199  
DOI: 10.1055/s-0040-1705991

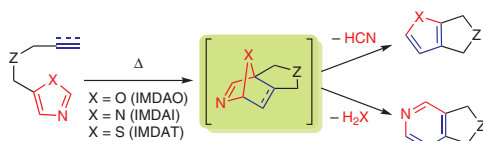
T. T. Nguyen  
P. Wipf\*

University of Pittsburgh, USA

## Intramolecular Diels–Alder Reactions of Oxazoles, Imidazoles, and Thiazoles

Review

1181



## Synthesis

*Synthesis* 2021, 53, 1200–1212  
DOI: 10.1055/s-0040-1706001

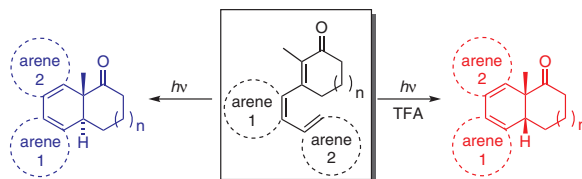
X. Zhao  
J. D. Rainier\*

University of Utah, USA

## The Synthesis of Conjugated Bis-Aryl Vinyl Substrates and Their Photoelectrocyclization Reactions towards Phenanthrene Derivatives

Short Review

1200



## Synthesis

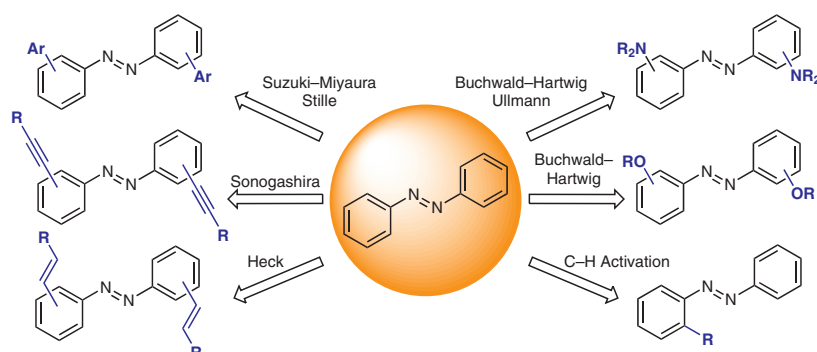
## Modification of Azobenzenes by Cross-Coupling Reactions

## Short Review

*Synthesis* **2021**, 53, 1213–1228  
DOI: 10.1055/s-0040-1705999

**M. Walther**  
**W. Kipke**  
**S. Schultze**  
**S. Ghosh**  
**A. Staubitz\***

University of Bremen, Germany



OPEN ACCESS

1213

## Synthesis

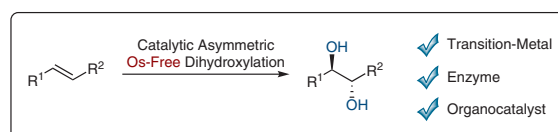
## Catalytic Asymmetric Osmium-Free Dihydroxylation of Alkenes

## Short Review

*Synthesis* **2021**, 53, 1229–1236  
DOI: 10.1055/a-1325-4092

**S. Su**  
**C. Wang\***

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



1229

## Synthesis

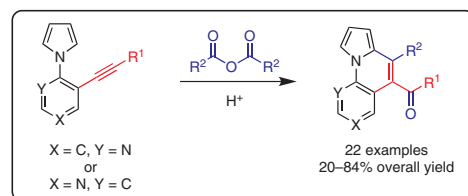
## Synthesis of Pyrrolo[1,2-a][1,6]- and [1,8]naphthyridines by Alkyne-Carbonyl Metathesis

## Feature

*Synthesis* **2021**, 53, 1237–1246  
DOI: 10.1055/s-0040-1706105

**M. B. Ponce**  
**S. Parpart**  
**A. Villinger**  
**E. Torres Rodríguez**  
**P. Ehlers\***  
**P. Langer\***

University of Rostock, Germany



- ✓ one-pot two-step procedure
- ✓ metal-free
- ✓ high overall yield and selectivity

1237

## Synthesis

## Forskolin Editing via Radical Iodo- and Hydroalkylation

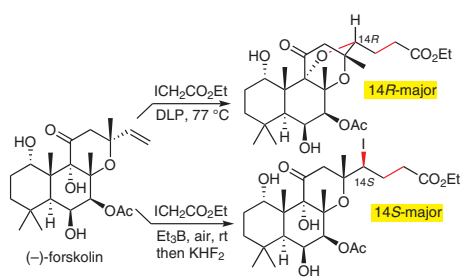
## Feature

1247

*Synthesis* 2021, 53, 1247–1261  
DOI: 10.1055/s-0040-1706003

**E. Pruteanu**  
**N. D. C. Tappin**  
**V. Girbu**  
**O. Morarescu**  
**F. Dénès**  
**V. Kulcički\***  
**P. Renaud\***

University of Bern, Switzerland  
Institute of Chemistry MECR,  
Republic of Moldova



## Synthesis

Straightforward Synthesis of Succinimide-Fused Pyrrolizidines by A Three-Component Reaction of  $\alpha$ -Diketone, Amino Acid, and Maleimide

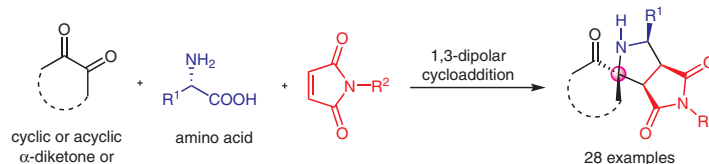
## Paper

1262

*Synthesis* 2021, 53, 1262–1270  
DOI: 10.1055/s-0040-1706608

**P. Shen**  
**Y. Guo**  
**J. Wei**  
**H. Zhao\***  
**H. Zhai\***  
**Y. Zhao**

Ningbo University, P. R. of China  
Shenzhen Graduate School of  
Peking University, P. R. of China



- ◆ catalyst-free conditions
- ◆ remarkable functional group tolerance
- ◆ high yield and excellent diastereoselectivity
- ◆ ubiquitous succinimide-fused pyrrolizidines
- ◆ quaternary carbon center
- ◆ gram-scale synthesis

## Synthesis

Iodothiophenes and Related Compounds as Coupling Partners in Copper-Mediated *N*-Arylation of Anilines

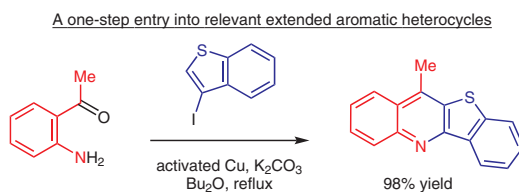
## Paper

1271

*Synthesis* 2021, 53, 1271–1284  
DOI: 10.1055/s-0040-1706542

**S. Bouarfa**  
**G. Bentabed-Ababsa\***  
**W. Erb**  
**L. Picot\***  
**V. Thiéry**  
**T. Roisnel**  
**V. Dorcet**  
**F. Mongin\***

Univ Rennes, France  
Université d'Oran 1 Ahmed Ben  
Bella, Algeria  
La Rochelle Université, France



## Synthesis

## Reductive Knoevenagel Condensation with the Zn–AcOH System

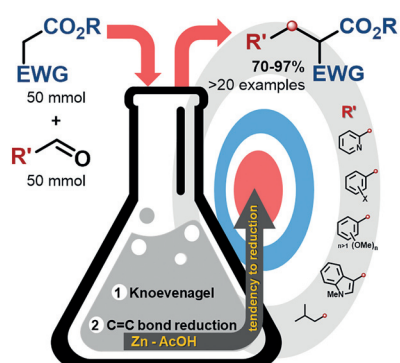
Paper

1285

Synthesis 2021, 53, 1285–1291  
DOI: 10.1055/s-0040-1705940

K. L. Ivanov  
M. Ya. Melnikov  
E. M. Budynina\*

Lomonosov Moscow State University,  
Russian Federation



## Synthesis

(E)-3-Arylidene-4-diazopyrrolidine-2,5-diones: Preparation and Use in Rh<sup>II</sup>-Catalyzed X–H Insertion Reactions towards Novel, Medicinally Important Michael Acceptors

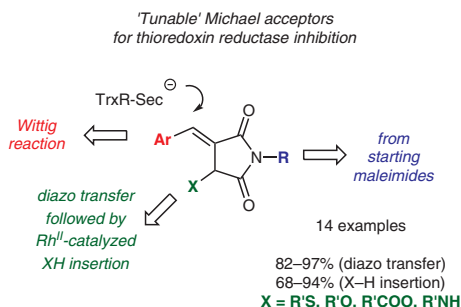
Paper

1292

Synthesis 2021, 53, 1292–1300  
DOI: 10.1055/s-0040-1706556

E. Chupakhin  
M. Gecht  
A. Ivanov  
G. Kantin  
D. Dar'in\*  
M. Krasavin\*

Saint Petersburg State University,  
Russian Federation  
Immanuel Kant Baltic Federal  
University, Russian Federation



## Synthesis

## Palladium Nanoparticles Anchored on Magnesium Organosilicate: An Effective and Selective Catalyst for the Heck Reaction

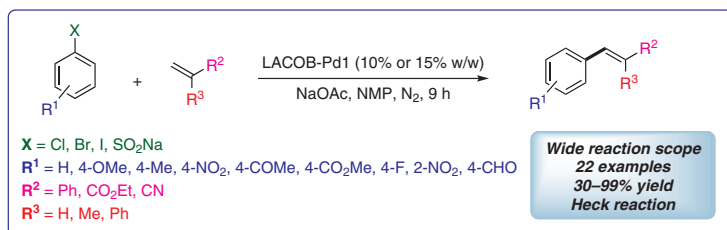
Paper

1301

Synthesis 2021, 53, 1301–1306  
DOI: 10.1055/s-0040-1705938

B. F. dos Santos  
B. A. L. da Silva  
A. R. de Oliveira  
M. H. Sarragiotto  
A. W. Rinaldi  
N. L. C. Domingues\*

Federal University of Grande  
Dourados – UFGD, Brazil



## Synthesis

*Synthesis* 2021, 53, 1307–1314  
DOI: 10.1055/s-0040-1705964

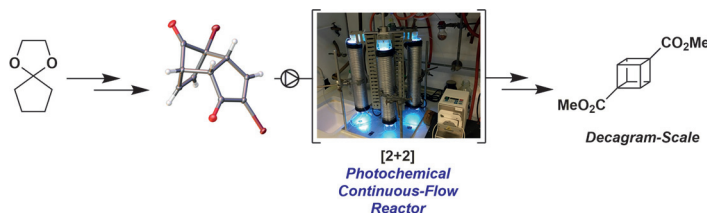
D. E. Collin  
E. H. Jackman  
N. Jouandon  
W. Sun  
M. E. Light  
D. C. Harrowven  
B. Linclau\*

University of Southampton, UK

## Decagram Synthesis of Dimethyl 1,4-Cubanedicarboxylate Using Continuous-Flow Photochemistry

Paper

1307



## Synthesis

*Synthesis* 2021, 53, 1315–1330  
DOI: 10.1055/s-0040-1706484

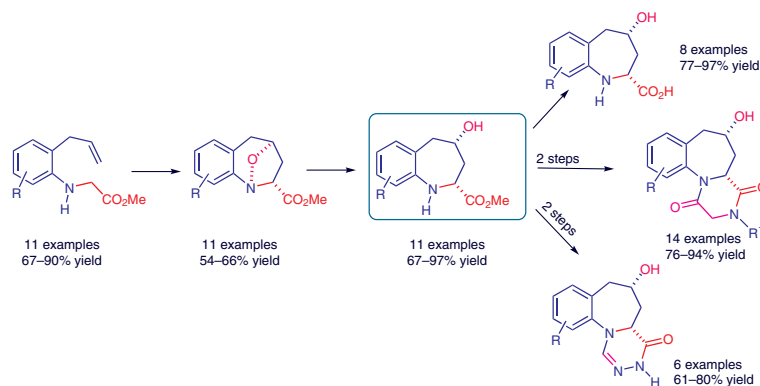
S. A. Guerrero  
J. E. Ramírez  
C. M. Sanabria  
L. M. Acosta  
J. Cobo  
M. Nogueras  
A. Palma\*

Universidad Industrial de  
Santander, Colombia

## Easy Access to Novel Tetrahydro-1-benzazepine-2-carboxylic Acids and Tetrahydro-1-benzazepines Carrying [a]-Fused Heterocyclic Units from 2-(Allylaryl)glycinates

Paper

1315



## Synthesis

*Synthesis* 2021, 53, 1331–1340  
DOI: 10.1055/s-0040-1706599

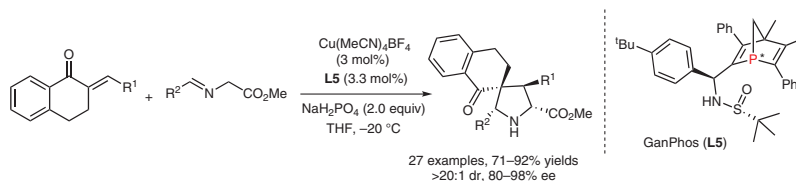
Z. Gan\*  
K. Li  
H. Zhang  
E.-Q. Li\*

Henan University of Engineer-  
ing, P. R. of China  
Zhengzhou University,  
P. R. of China

## Copper/GanPhos-Catalyzed 1,3-Dipolar Cycloaddition of Azomethine Ylides: An Efficient Access to Chiral Pyrrolidine Spirocycles

Paper

1331



## Synthesis

Synthesis 2021, 53, 1341–1348  
DOI: 10.1055/s-0040-1705963

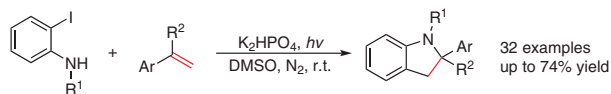
X. Zhao  
L. Guo  
C. Yang  
W. Xia\*

Harbin Institute of Technology  
(Shenzhen), P. R. of China

### Photoinduced [3+2] Annulation of Alkene with *o*-Iodoanilines: An Expedient Approach to Indolines

Paper

1341



- metal-free
- mild conditions
- high regioselectivity
- general access to mono-/disubstituted indolines and spiroindolines

## Synthesis

Synthesis 2021, 53, 1349–1355  
DOI: 10.1055/s-0040-1706549

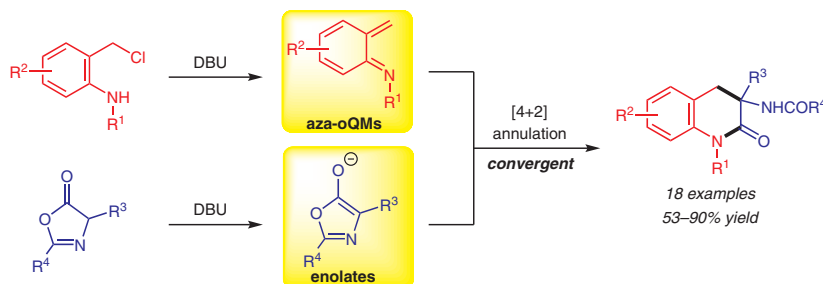
H. Ji  
C. He  
H. Gao  
W. Fu  
J. Xu\*

Zhejiang Sci-Tech University,  
P. R. of China

### DBU-Promoted Formal [4+2] Annulation Reactions of *o*-Chloromethyl Anilines with Azlactones

Paper

1349



## Synthesis

Synthesis 2021, 53, 1356–1364  
DOI: 10.1055/s-0040-1707329

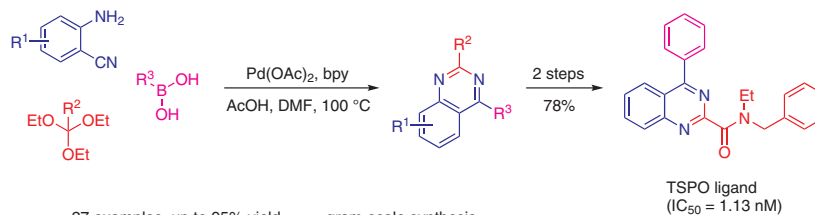
Z. Wang  
W. Chen  
C. He  
G. Zhang\*  
Y. Yu\*

Zhejiang University,  
P. R. of China

### Palladium(II)-Catalyzed Three-Component Tandem Cyclization Reaction for the One-Pot Assembly of 4-Arylquinazolines

Paper

1356



- 27 examples, up to 95% yield
- gram-scale synthesis
- one-pot cascade reaction
- good functional group tolerance

TSPO ligand  
(IC<sub>50</sub> = 1.13 nM)

## Synthesis

Synthesis 2021, 53, 1365–1371  
DOI: 10.1055/s-0040-1705967

M. Sun

L. Zhao

Y.-L. Yu

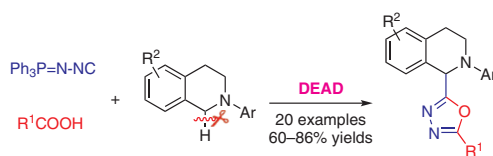
M.-W. Ding\*

Central China Normal University,  
P. R. of China

## DEAD-Mediated Oxidative Ugi/Aza-Wittig Reaction for the Synthesis of 5-(1,2,3,4-Tetrahydroisoquinolin-1-yl)-1,3,4-oxadiazoles Starting from (*N*-Isocyanimine)triphenylphosphorane

Paper

1365



- Odorless isocyanide chemistry
- DEAD as an efficient metal-free oxidant
- Simple operation and mild reaction conditions
- A first example of oxidative Ugi/aza-Wittig reaction
- C(sp<sup>3</sup>)-H bond functionalization involving 1,3,4-oxadiazoles generated in situ

## Synthesis

Synthesis 2021, 53, 1372–1378  
DOI: 10.1055/s-0040-1705973

D. Cheng\*

Y. Pu

M. Wang

Y. Shen

J. Shen

X. Xu\*

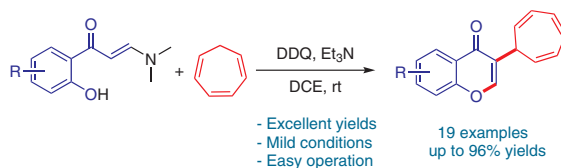
J. Yan

Zhejiang University of Technolo-  
gy, P. R. of China

## 2,3-Dichloro-5,6-dicyano-1,4-benzoquinone (DDQ)-Mediated Tandem Oxidative-Coupling/Annulation of *o*-Hydroxyaryl Enaminones with Cycloheptatriene

Paper

1372



- Excellent yields
- Mild conditions
- Easy operation

19 examples  
up to 96% yields