Internal Chelation within Functionalized Organoindium Reagents: Prospects for Regio- and Stereocontrol in the Allylation, Propargylation and Allenylation of Carbonyl Compounds

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Organocatalyzed [3+3] Annulations for the Construction of Heterocycles

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Oxidation of 4-Aryl-1,1,1-trifluorobut-2-en-2-yl Trifluoromethane-sulfonates by 4-Picoline-N-Oxide: A Novel Approach to \( \beta \)-Trifluoromethyl-\( \alpha,\beta \)-enones

D. Li
S. Lv
J. Qu
Y. Zhou*
Dalian University of Technology, P. R. of China

\[
\text{Ar}^+\text{CF}_3\text{OTf} + \text{Et}_3\text{N} \rightarrow \text{Ar}^+\text{CF}_3\text{O} + \text{N}\text{O}^+\text{Et}_3\text{N}
\]

\[
\text{CH}_2\text{ClCH}_2\text{Cl}, 25 \degree \text{C}, 3-6 \text{ h}
\]

18 examples

73-87% yield

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Practical Preparation of Cyclopropenone 1,3-Propanediol Ketal

F. F. Mulks*
R. Heckershoff
M. Zimmer
A. S. K. Hashmi
Ruprecht-Karls Universität Heidelberg, Germany

\[
\text{Cl}^+\text{Cl}^+\text{HO} + \text{HO} \rightarrow \Delta \rightarrow \text{HO} + \text{Cl}^+\text{Cl}^+
\]

\[
\text{p-TsOH, Toluene, 82%}
\]

\[
\text{KNH}_2, \text{NH}_3, 83%
\]

simple C\(_3\) and dioxaspirooctene building block
detailed step-by-step guide for 10 g scale synthesis

---

A Base-Promoted One-Pot Asymmetric Friedel–Crafts Alkylation/Michael Addition of 4-Substituted Indoles

R. Connon
L. Carroll
P. J. Guiry*
University College Dublin, Ireland

1) \( \text{Zn(OTf)}_2 \) (20 mol%) ligand (20 mol%) solvent, 40 \degree \text{C}, 48 h
2) \( \text{DBU, CHCl}_3 \), rt, 18 h

\( \text{CN} \)

\( \text{CN} \)

\( \text{Me} \)

\( \text{Ar}^+\text{NO}_2^+\text{Me} \)

Up to 71% yield

Up to 85% ee
Synthesis of Phenanthrenes via Palladium-Catalyzed Three-Component Domino Reaction of Aryl Iodides, Internal Alkynes, and o-Bromobenzoic Acids

Y. Yang, L. Zhou, X. Yang, X. Luo, G. Deng, Y. Yang, Y. Liang
Hunan Normal University, P. R. of China

Yield: 31 examples up to 86% yield

31 examples

readily available starting materials
broad substrate scope
step economy and three C–C bonds formation
involving C–H activation and decarboxylation

R1
R2
R3
+ CO2H
X
PdCl2(dppf) (5 mol%)
K2CO3, Me4NOAc
DMSO, 140 °C, 12 h

R1
R2
R4

R1
R2
R4

Synthesis of Indoles with 1,n-Dibromoalkanes by a Pd(II)-Catalyzed and Norbornene-Mediated Reaction Cascade

M. Henkel, T. Bach
Technische Universität München, Germany

Annulation of Indoles with 1,n-Dibromoalkanes by a Pd(II)-Catalyzed and Norbornene-Mediated Reaction Cascade

M. Henkel, T. Bach
Technische Universität München, Germany

PdCl2(MeCN)2
norbornene

n = 1
(11 examples, 31–68%)

n = 2

n = 3

Cobalt(III)-Catalyzed Diastereoselective Three-Component C–H Bond Addition to Butadiene and Activated Ketones

Z. Shen, C. Li, B. Q. Mercado, J. A. Ellman
Yale University, USA

Cp*Co(III)

16 examples

48–98% yield
often >20:1 dr

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Rhodium(III)-Catalyzed Three-Component 1,2-Diamination of Unactivated Terminal Alkenes

S. Lee
Y. J. Jang
E. J. T. Phipps
H. Lei
T. Rovis*
Columbia University, USA

Palladium-Catalyzed [4+2] Annulation of Aryl and Alkenyl Carboxamides with 1,3-Dienes via C–H Functionalization: Synthesis of 3,4-Dihydropyridinones and 5,6-Dihydropyridinones

M. Sun
J. Li
W. Chen
H. Wu
J. Yang
Z. Wang*
Taizhou University, P. R. of China

Realizing the Trifunctional Potential of Alkyl 4-Chloro-2-diazo-3-oxobutanoates: Convenient Assembly of 6,7-Dihydro-4H-[1,2,3]triazolo[5,1-c][1,4]thiazine Core

D. Dar’in
O. Khoroshilova
G. Kantin
M. Krasavin*
Saint Petersburg State University, Russian Federation
Synthesis of Spirocyclic Amines by 1,3-Dipolar Cycloaddition of Azomethine Ylides and Azomethine Imines

A. Choi
J. Castle
R. Saruengkhanphasit
I. Coldham*
University of Sheffield, UK

Microwave-Accelerated N-Acylation of Sulfoximines with Aldehydes under Catalyst-Free Conditions

K. K. Rajbongshi
S. Ambala
T. Govender
H. G. Kruger
P. I. Arvidsson*
T. Naicker*
University of KwaZulu-Natal, South Africa

Oligoether-Substituted Derivatives of Carbon-Rich 1,4,7,10,13,16-Hexaethynyltribenzo[a,e,j]cyclododeca-5,11,17-triyne (C_{36}H_{12}) and 1,4,9,12-Tetrakis(ethynyl)dibenzo[a,g]cyclododeca-5,7,13,15-tetrayne (C_{28}H_{8}): Potential Precursors to the Circular [6]Phenylene (‘Antikekule’) Frame

U. Dahlmann
K. P. C. Vollhardt*
University of California at Berkeley, USA
Metal-Free Halogenation of N-Substituted Enaminoesters and Enaminones: A Facile Access to Functionalized α,α-Dihaloimines

C. Qiu
H. Yu
C. Qiu
F. Li
T. Suo
C. Wang
S. Bie
Z. Li*

Tianjin University of Traditional Chinese Medicine, P. R. of China

Metal-free
Inexpensive
Mild conditions
Ample scope
Scalable and safe
Up to 99% yield

**Reaction Conditions:**

\[
\text{TCCA/NBS, CH}_3\text{CN, r.t., air for 10 min to 1 h}
\]

**Yielding Products:**

\[
R^1 = \text{aryl, alkyl}
R^2 = \text{het/aryl, alkyl}
\text{EWG} = \text{CO}_2\text{Et, CO}_2\text{Bn, COPh, CN}
\]

\[
X = Y = \text{Cl, 26 examples}
X = Y = \text{Br, 23 examples}
X = \text{F}/\text{Cl}, Y = \text{Cl}/\text{Br, 3 examples}
\]