Synthesis of $^{13}$C-Labeled Steroids

F. Dénès
J. Farard
J. Lebreton*
Université de Nantes, France

Recent Developments in the Synthesis of 1,2,5-Thiadiazoles and 2,1,3-Benzothiadiazoles

O. A. Rakitin*
N. D. Zelinsky Institute of Organic Chemistry, Russian Federation
Catalyst-Free [2,3]-Sigmatropic Rearrangement Reactions of Photochemically Generated Ammonium Ylides

F. Li, F. He, R. M. Koenigs*
RWTH Aachen University, Germany

Visible light (470 nm)

Anilines + donor-acceptor diazokanes → metal-free photochemical rearrangement reactions of ammonium ylides

Key features:
- Mild reaction conditions
- Metal-free
- Operationally simple
- Broad applicability
- Compatibility with cyclic amines

Scalable Synthesis of Acridinium Catalysts for Photoredox Deuterations

B. Zilate, C. Fischer, L. Schneider, C. Sparr*
University of Basel, Switzerland

Metal-free photochemical rearrangement reactions of ammonium ylides

Special Topic Cover Page: Halogenation Methods (with a View towards Radioimaging Applications)
Radiohalogenation of Organic Compounds: Practical Considerations and Challenges for Molecular Imaging

A. Sutherland*
University of Glasgow, UK


S. Milicevic Sephton*
X. Zhou
S. Thompson
F. I. Aigbirhio
University of Cambridge, UK

Asymmetric Synthesis of α-Chloro-α-halo Ketones by Decarboxylative Chlorination of α-Halo-β-ketocarboxylic Acids

K. Kitahara
H. Mizutani
S. Iwasa
K. Shibatomi*
Toyohashi University of Technology, Japan
Improvements of C–H Radio-Iodination of N-Acylsulfonamides toward Implementation in Clinics

1) Pd(OAc)$_2$ (cat.)
PTSA (cat.)
0.25 h
2) $^{125}$I NIS, 0.25 h

- Short reaction time
- Catalytic
- No side-products

Synthesis of $^{[18F]}$-γ-Fluoro-α,β-unsaturated Esters and Ketones via Vinylogous $^{[18F]}$-Fluorination of α-Diazoacetates with $^{[18F]}$AgF

- 10 Examples
- 2–44% Radiochemical Yield

Willgerodt-Type Dichloro(aryl)-λ$_3$-Iodanes: A Structural Study

- X-ray and solution-phase analysis
- $\bullet =$ Ph, CO$_2$Et, Br, CF$_3$
Photochemical Deracemization of Chiral Sulfoxides Catalyzed by a Hydrogen-Bonding Xanthone Sensitizer

L. Wimberger
T. Kratz
T. Bach
Technische Universität München, Germany

Nitroacenaphthene as a New Photocatalyst for the Synthesis of Sulfonyl Amidines

Y. Jian
M. Chen
C. Yang
W. Xia
Harbin Institute of Technology (Shenzhen), P. R. of China

Base-Mediated 1,6-Aza-Michael Addition of Heterocyclic Amines and Amides to para-Quinone Methides Leading to Meclizine-, Hydroxyzine- and Cetirizine-like Architectures

D. Roy
G. Panda
CSIR-Central Drug Research Institute, India
The Synthesis and Biological Evaluation of Indolactam Alkaloids

M. Mendoza
R. Eom
C. Salas
J. Haynes-Smith
K. L. Billingsley*
California State University Fullerton, USA

EC50 = 142 nM to >10 µM

Thiolation of Pyridine-2-sulfonamides using Magnesium Thiolates

B. Heinz
M. Balkenhohl
P. Knochel*
Ludwig-Maximilians-Universität München, Germany

TMPMgClLiCl (1.2 equiv)
THF, 0 °C, 2 h

E-X (1.2–1.6 equiv)
THF, 0–25 °C

1) E-X (1.2–1.6 equiv)
THF, 0–25 °C

RSMgClLiCl (1.2 equiv)
0–25 °C, 12 h

R = alkyl
19 examples
50–95% yield

Syntheses of Pyrazine-, Quinoxaline-, and Imidazole-Fused Pyrroline Nitroxides

M. Isbera
B. Bognár
G. Gulyás-Fekete
K. Kish
T. Kállai*
University of Pécs, Hungary
Szentágothai Research Centre, Hungary

2–3 steps
7 examples
15–30% overall yield
Hypervalent Iodine(III)-Catalyzed Epoxidation of β-Cyanostyrenes

**Hypervalent Iodine(III)-Catalyzed Epoxidation of β-Cyanostyrenes**

- **S. R. Mangaonkar**
- **F. V. Singh**
  VIT Institute, India

**Reagents:**
- PhI (10 mol%), Oxone (2.0 equiv)
- TFA (2.4 equiv), CHCl₃, rt, 60–90 min, ultrasonic bath

**Yield:**
- 28 examples
- 65–94%

**Examples:**
- R¹ = CN, CO₂Et; R² = H, CN; Ar = Ph, 4-FC₆H₄, 2-ClC₆H₄, 4-ClC₆H₄, 2,3-(Cl)₂C₆H₃, 3-BrC₆H₄, 4-BrC₆H₄, 4-NCC₆H₄, 3-NO₂C₆H₄, 4-(MeO)C₆H₄, 3,4-(MeO)₂C₆H₃, 3,4,5-(MeO)₃C₆H₂, 2,3,4-(MeO)₃C₆H₂, 4-(BnO)C₆H₄, 3-(HO)-4-(MeO)C₆H₃, 1-Naphthyl, 2-Naphthyl, 9-Anthryl

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Recyclable Heterogeneous Copper(II)-Catalyzed Oxidative Cyclization of 2-Pyridine Ketone Hydrazones Towards [1,2,3]Triazolo[1,5-a]pyridines

**Recyclable Heterogeneous Copper(II)-Catalyzed Oxidative Cyclization of 2-Pyridine Ketone Hydrazones Towards [1,2,3]Triazolo[1,5-a]pyridines**

- **G. Jiang**
- **Y. Lin**
- **M. Cai**
- **H. Zhao**
  Guangdong Pharmaceutical University, P. R. of China
  Jiangxi Normal University, P. R. of China

**Catalyst:**
- MCM-41-2N-Cu(OAc)₂ (5 mol%)

**Yield:**
- 33 examples
- up to 94% yield
- 23 examples
- up to 98% yield

**Steps:**
1. N₂H₄·H₂O, AcOH (0.1 equiv), EtOH, reflux, 6 h
2. MCM-41-2N-Cu(OAc)₂ (5 mol%), EtOAc/EOH (5:1), rt, air

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Niobium Pentachloride Mediated (Hetero)aromatic Aldehyde Friedel–Crafts Hydroxalkylation with Arenes: An Efficient Strategy to Synthesize Triarylmethanes

**Niobium Pentachloride Mediated (Hetero)aromatic Aldehyde Friedel–Crafts Hydroxalkylation with Arenes: An Efficient Strategy to Synthesize Triarylmethanes**

- **S. M. M. Rodrigues**
- **D. Previdi**
- **G. S. Baviera**
- **A. A. Matias**
- **P. M. Donate**
  Universidade de São Paulo, Brazil

**Catalyst:**
- NbCl₅ (1 equiv.), DCM, rt

**Yield:**
- 24 examples
- up to 99% yield