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

F. Dénès
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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

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

Scalable Synthesis of Acridinium Catalysts for Photoredox Deuterations

**Equations**
- **Equation 1:**
  - Br, Me
  - Mg
  - THF, 60 °C
  - M = Mg

- **Equation 2:**
  - LiCl, MeOD, NMP, 24 h
  - 40 W blue LED

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
11 compounds RCC = 27–84%

- Short reaction time
- Catalytic
- No side-products

Synthesis of $[^{18}$F$]$-$\alpha$-$\beta$-unsaturated Esters and Ketones via Vinylogous $^{18}$F-Fluorination of $\beta$-Diazoacetates with $[^{18}$F$]$AgF

Vinylogous $^{18}$F-Fluorination with $[^{18}$F$]$AgF

Willgerodt-Type Dichloro(aryl)-$\lambda^3$-Iodanes: A Structural Study

Willgerodt-Type Reagents

X-ray and solution-phase analysis

$=$ 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

Diagrams showing the reaction scheme and product formation.

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

Diagrams showing the reaction scheme and product formation.

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

Diagrams showing the reaction scheme and product formation.
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

EC_{50} = 142 nM to >10 µM

Thiolation of Pyridine-2-sulfonamides using Magnesium Thiolates

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

1) E-X (1.2–1.6 equiv)
THF, 0–25 °C
2) RSMgCl·LiCl (1.2 equiv)
0–25 °C, 12 h
R = alkyl

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
15–39% overall yield

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

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

PhI (10 mol%), Ozone (2.0 equiv)
TFA (2.4 equiv), CHCl₃, rt, 60–90 min, ultrasonic bath

28 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-HOC₆H₄, 4-MeC₆H₄, 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

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

MCM-41-2N-Cu(OAc)₂ (5 mol%)

33 examples up to 94% yield

1. N₂H₄·H₂O, AcOH (0.1 equiv)
EtOH, reflux, 6 h

2. MCM-41-2N-Cu(OAc)₂ (5 mol%)
EtOAc/EtOH (5:1), rt., air

Recyclable copper catalyst!

Niobium Pentachloride Mediated (Hetero)aromatic Aldehyde Friedel–Crafts Hydoxyalkylation 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

NbCl₅ (1 equiv.)
DCM, rt

R = H, F, NO₂, CH₃, CF₃, OCH₃
X = various

24 examples up to 99% yield