Radical-Mediated Difunctionalization of Styrenes

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Radical-Mediated Difunctionalization of Styrenes

R1:
C, CF3, N, P, O, S,
Cl, Se, Si radicals

R2:
tBuOO radical or O2

Nu:
ArH, ArB(OH)2, MeCN,
ROH, RNH2, R2NH,
RCO2–, CN–, SCN–, N3–,
F–, Cl–, Br–, I–

Advances in C(sp3)–H Bond Functionalization via Radical Processes

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William Paterson University of New Jersey, USA

Advances in C(sp3)–H Bond Functionalization via Radical Processes

R
CH2
X = H, Alkyl, OH, COR', CN, etc
1.5-HAT

TBHP, DTBP etc.

Photocatalysis or Electrocatalysis

X = H, Alkyl, OH, COR', CN, etc
Recent Progress on the Synthesis of CF₂H-Containing Derivatives

N. Levi
D. Amir
E. Gershonov*
Y. Zafrani*
Israel Institute for Biological Research, Israel

Stereoselective Synthesis of syn-γ-Hydroxynorvaline and Related α-Amino Acids

D. Valachová
B. Ferko
E. Puchčová
O. Caletková
D. Berkeš
A. Kolarovič
P. Jakubč
Slovak University of Technology, Slovakia

Sumanene Hexaester: An Electron-Deficient Buckybowl

H. Toda
Y. Uetake
Y. Yakiyama
H. Nakazawa
T. Kajitani
T. Fukushima
H. Sakurai*
Osaka University, Japan
**Synthesis**

**Easy Access to 2-Fluoro- and 2-Iodo-2H-azirines via the Halex Reaction**

A. V. Agafonova  
I. A. Smetanin  
N. V. Rostovskii  
A. F. Khlebnikov  
M. S. Novikov*  
Saint Petersburg State University, Russia

**Methyl-α-D-glucopyranoside as Green Ligand for Selective Copper-Catalyzed N-Arylation**

Y. Chen  
F. Du  
F. Chen  
Q. Zhou  
G. Chen*  
Shenyang Pharmaceutical University, P. R. of China

**Total Synthesis of Enisorine D and its Analogues**

Shashi  
M. A. Hussain  
F. A. Khan*  
Indian Institute of Technology Hyderabad, India

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**Efficient Synthesis of Pyrido[3,2-c]coumarins via Silver Nitrate Catalyzed Cycloisomerization and Application to the First Synthesis of Polyneomarine C**

J. A. Yoon  
Y. T. Han*  
Dankook University, Republic of Korea

Pyrido[3,2-c]coumarins

Efficient synthesis via silver nitrate catalyzed cycloisomerization.

**Regioselective Diboron-Mediated Semireduction of Terminal Allenes**

A. M. Gates  
W. L. Santos*  
Virginia Tech, USA

Z* (major): up to 91:9 selectivity  
up to 88% yield  
21 examples

**Transition-Metal-Promoted Oxidative Cyclization To Give 1,2,4-Trisubstituted Carbazole Scaffolds**

M. Szewczyk  
M. Ryczkowska  
S. Makowiec*  
Gdansk University of Technology, Poland

Mn(OAc)_3*H_2O/AcOH, 4 h, 70 °C  
Sc(OTf)_3, I_2, Et_3N, DCM, 12 h, r.t.

R¹ = Ar, H, R² = OMe, NAr, NAlk2
Divergent Synthesis of Various 2-Aryl Iminocyclitols from (R)-p-Hydroxyphenylglycine

Key Features
1. OsO4-catalyzed dihydroxylation
2. Base-promoted intramolecular cyclization
3. Pyrrolidine and piperidine alkaloids

Copper-Catalyzed Nitrogenation of Aromatic and Aliphatic Aldehydes: A Direct Route to Carbamoyl Azides

- Aliphatic aldehydes and aryl aldehydes
- TBPB as the oxidant and initiator
- Yield up to 93%
- Copper catalysis

Synthesis of 5-Substituted 2-Pyrrolidinones by Coupling of Organozinc Reagents with Cyclic N-Acyliminium Ions

11 examples 25–75% yield