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Ring Forming Approaches to para-Quinones: Toward a General Diels–Alder Disconnection

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Advancing the Logic of Polymer Synthesis via Skeletal Rearrangements

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Flexible Piezoionic Strain Sensors toward Artificial Intelligence Applications

External strain and stress

Flexible piezoionic strain sensors → Signal processing → Smart control

Transformations of Main-Group Organometallics Induced by Transition Metals

Oxidative Dehydrometallation

Oxidative Ligand Coupling

Oxidative Homo- & Cross-Coupling of Enolates

An Efficient Synthesis of a Highly Functionalized Dihydrobenzo-thiophene Derivative: A Ring-Contracted Analogue of the Anti-inflammatory Drug Propoxicam

Cross-Claissen coupling of an α-amino acid

Unprecedented Hg(II)-mediated C=S bond formation

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Mild Synthesis of Symmetric 3,5-Disubstituted Nitrobenzenes

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P-Chiral Phosphine Sulfide Synthesis by Combination of Enzymatic Desymmetrization and Successive Deformylative P–C Cross-Couplings

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Polyoxometalate–Ionic Liquid-Catalyzed Ritter Reaction for Efficient Synthesis of Amides

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Construction of Indole Skeletons through Direct Catalytic Three-Component Domino Reactions of Vinylarenes, Aldehydes, and Pronucleophiles

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1) oxidation
2) reduction

Formal Synthesis of Teadenols via Palladium-Catalyzed 6-endo Cyclization of an Epoxyphenol

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Y. Higashijima
M. Kisanuki
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Amine Oxidation by Electrochemically Generated Peroxodicarbonate

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1. Alkylation
2. Oxidation

Thiapillar[6]arene

1. Triflation
2. Pd + RB(OH)₂
3. Oxidation

Fluorescent
Electron-Acceptor

Nitric Acid Promoted Metal-Free Bromothiolation of Internal Alkynes with Hydrobromic Acid and Disulfides

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Z.-X. Yao
H. Su
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R¹ = aryl, alkyl
R² = aryl, alkyl

19 examples
up to 99:1 Z/E

2-Iodoxybenzoic Acid–Dimethyl Sulfoxide (IBX-DMSO)-Promoted Oxidative Aromatization of Spiro[2.5]octa-4,7-dien-6-one

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IBX (10 mol%)
DMSO, 100 °C, air, 6-12 h

- Metal-free
- Oxidative aromatization
- 20 examples, up to 98% isolated yield

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Visible-Light-Mediated Direct Amidation of Arenes and Heteroarenes with N-Aminopyridinium Salts

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C. Duan
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Ru(bpy)₃Cl₂ (5 mol%) + MeCN, r.t., blue light, 24 h

13 examples up to 90.0% yield

Construction of Successive Stereogenic Centers of ent-Kauranoid through an Oxidative Dearomatization/1,2-Shift Cascade

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Waseda University, Japan

Pb(OAc)₄ (2.0 eq) + CH₂Cl₂/HFIP = 1:1

0 °C, 5 min, 83%

ent-kauranoid

Amidation of α-Amino Acids Using Dichloro(methyl)(3,3,3-trifluoropropyl)silane and Imidazole without Conventional Protection and Deprotection of α-Amino Group

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Y. Suto
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Takasaki University of Health and Welfare, Japan

R¹CO₂H + H₂Nₐ₅ + (2.5 equiv) + Me₆SiCl + (5-7 equiv) imidazole (5 equiv) → CH₃CN, 40-70 ºC

Amino acid amides: 17 examples
Amino acid anilides: 23 examples
up to 96% yield
95 to >99% ee
Amine-Free O-Sulfonylation by a Combination of 4-Methylpyridine N-Oxide Catalyst with 4Å Molecular Sieves

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J. Masuda
S. Kitagaki
Meijo University, Japan

R-OH
primary-OH
secondary-OH

sulfonyl chloride
4-Me-Pyr N-oxide (20 mol%) MS 4Å (300 wt%)
CH₂Cl₂

up to 99% yield

Me
4-Me-Pyr N-oxide

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