Aldehyde Carboxylation: A Concise DFT Mechanistic Study and a Hypothetical Role of CO₂ in the Origin of Life

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Combining Defects in a Single Nanographene: A Fully Helical Saddle Ribbon

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Synpacts 997
Potassium Alkoxide/Disilane-Mediated Dehalogenative Deuteration

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Transition-metal-free
Mild reaction conditions
Cheap deuterium source
High incorporation yield and D content

up to 91% yield

Enantioselective Reductive Diarylation of Alkenes by Ni-Catalyzed Domino Heck Cyclization/Cross Coupling

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W. Kong*
Wuhan University, P. R. of China

mild conditions & broad substrate scope
all-carbon quaternary centers
high enantioselectivity
no preprepared organometallic reagents

33 examples
30–81% yield
90–99% ee

Sharpening Up Your Spectra: Broadband Homonuclear Decoupling in HSQC by Real-Time Pure Shift Acquisition

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conventional HSQC
pure shift HSQC

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Recent Developments in the Synthesis of Nitrogen-Containing Heterocycles through C–H/N–H Bond Functionalizations and Oxidative Cyclization

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Halotrimethylsilane-Nitrite/Nitrate Salts: Efficient and Versatile Reagent System for Diverse Organic Synthetic Transformations

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Nickel-Catalyzed β-Carboxylation of Ynamides with Carbon Dioxide

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New Facile Synthesis of 3,4-Dihydroquinazoline-2(1H)-thiones by a Sequential Ugi-Azide/Staudinger/Aza-Wittig/Cyclization Reaction

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Synthesis of 6-Chloro-5-(trifluoroacetyl)pyridine-3-carbonitrile: A Novel, Versatile Intermediate for the Synthesis of Trifluoro-methylated Azaindazole Derivatives

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J. Kessabi
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Synthesis of Perfluoroalkyl-Substituted Oxindoles through Organophotoredox-Catalyzed Perfluoroalkylation of N-arylacrylamides with Perfluoroalkyl Iodides

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Enantioselective Arylation of 3-Carboxamide Oxindoles with Quinone Monoimines and Synthesis of Chiral Spirooxindole-benzofuranones

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Enantioselective Arylation of 3-Carboxamide Oxindoles with Quinone Monoimines

R₁ = H, Alkyl, Halide
R₂ = Alkyl
R₃ = Aryl, Alkyl
R₄ = H, Halide
R₅ = Sulfonyl

23 examples
up to 99% yield
up to 98% ee

Palladium-Catalyzed Regioselective Heck–Suzuki–Miyaura Cascade Cyclization for the Synthesis of Trisubstituted Arylideneisoquinolinones

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Palladium-Catalyzed Regioselective Heck–Suzuki–Miyaura
cascade cyclization for the synthesis of trisubstituted arylideneisoquinolinones

16 examples
68–82% yield
Ar = 2-thienyl, Ph, 4-Br-C₆H₄, 3,4-F₂C₆H₃

Bromsted Acids of Anionic Chiral Cobalt(III) Complexes as Catalysts for the Iodoglycosylation or Iodocarboxylation of Glycals

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Brønsted Acids of Anionic Chiral Cobalt(III) Complexes as Catalysts for the Iodoglycosylation or Iodocarboxylation of Glycals

31 examples
up to 84% yield,
9:1 dr (α/β)

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The Hudrlik–Peterson Reaction of Secondary cis-TMS-Epoxy Alcohols and its Application to the Synthesis of the Fatty Acid Intermediates

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Fe-Catalyzed Bisphosphorylation of Amino-2-en-1-ones with Trialkyl Phosphites

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Highly Regioselective Phosphine-Promoted [2+2+2] Annulations of Cyanoacetylenes and N-Tosylimines to 1,2-Dihydropyridine-3,5-dicarbonitrile Derivatives

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Triphenylphosphine Oxide-Catalyzed Selective α,β-Reduction of Conjugated Polyunsaturated Ketones

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Z. Lao
P. H. Toy*
The University of Hong Kong, P. R. of China

Ph3P=O (catalyst)

Cl3SiH

highly selective organocatalytic process

15 examples
91–100% yield

96% yield

2 examples
>67% yield

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