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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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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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

X. Liu*, Y. Huang, X. Meng, J. Li, D. Wang, Y. Chen, D. Tang, B. Chen*
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Halotrimethylsilane-Nitrite/Nitrate Salts: Efficient and Versatile Reagent System for Diverse Organic Synthetic Transformations

T. Mathew*, L. Gurung, S. Roshandel, S. B. Munoz, G. K. S. Prakash*
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Nickel-Catalyzed β-Carboxylation of Ynamides with Carbon Dioxide

R. Doi, T. Okano, I. Abdullah, Y. Sato*
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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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Q. Min
G. Yao
J.-A. Zhang
H.-F. Yu
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Synthesis of 6-Chloro-5-(trifluoroacetyl)pyridine-3-carbonitrile: A Novel, Versatile Intermediate for the Synthesis of Trifluoromethylated Azaindazole Derivatives

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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 Spiroxindole-benzofuranones

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H. Liu
S.-H. Zhao
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Enantioselective arylation of 3-carboxamide oxindoles with quinone monoimines and synthesis of chiral spiroxindole-benzofuranones

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

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

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

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W.-Q. Wu
N. Li
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K. Liu
J. Yu*
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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)
The Hudrlik–Peterson Reaction of Secondary cis-TMS-Epoxy Alcohols and its Application to the Synthesis of the Fatty Acid Intermediates

S. Saito  
Y. Nanba  
M. Morita  
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Fe-Catalyzed Bisphosphorylation of Amino-2-en-1-ones with Trialkyl Phosphites

S. Guo  
K. Jie  
L. Huang  
Z. Zhang  
Y. Wang  
Z. Fu  
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Highly Regioselective Phosphine-Promoted [2+2+2] Annulations of Cyanacetylenes and N-Tosylimines to 1,2-Dihydropyridine-3,5-dicarbonitrile Derivatives

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Q. Zhang  
X. Ji  
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Triphenylphosphine Oxide-Catalyzed Selective $\alpha,\beta$-Reduction of Conjugated Polyunsaturated Ketones

X. Xia
Z. Lao
P. H. Toy*

The University of Hong Kong,
P. R. of China

$\text{Ph}_3\text{P}=\text{O}$ (catalyst)
$\text{Cl}_3\text{SiH}$

highly selective organocatalytic process

15 examples 91–100% yield

2 examples $>67$% yield

96% yield

95% yield