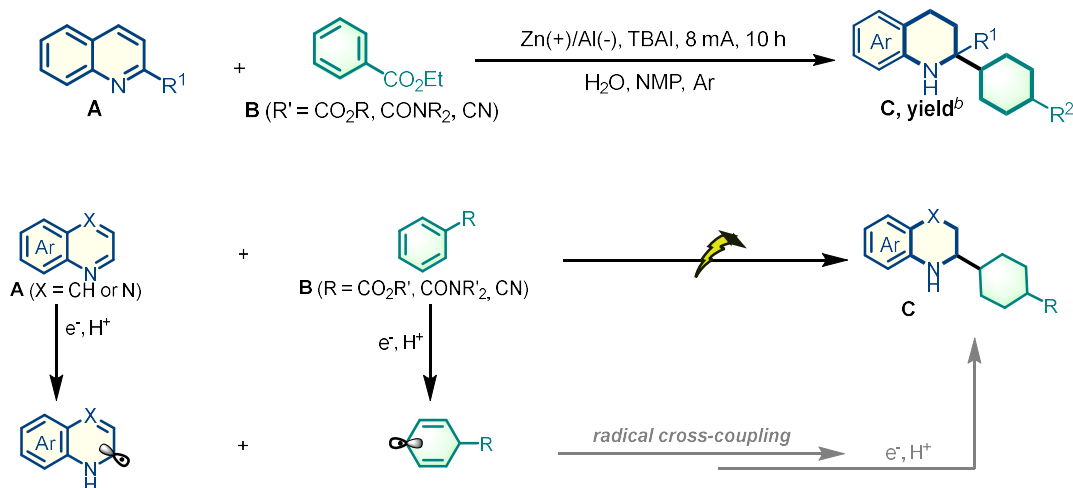


P. H. Dixneuf publications 2011-2025 with graphical abstracts

Red = book; Blue = Review, book chapter; black = international journal

495. Selective Electroreductive Cross-Coupling of *N*-Heteroarenes and Aryl Carboxylic Derivatives

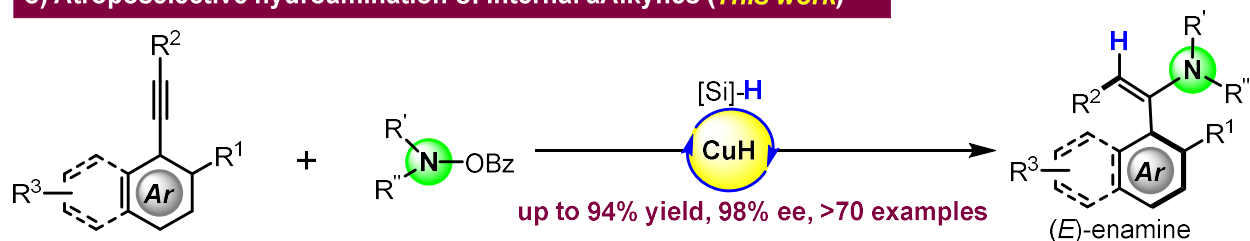
Xinyu Chen, Maorui Wang, Huanfeng Jiang, Pierre. H. Dixneuf, and Min Zhang
J. Am. Chem. Soc. **2025**, 147, 6572–6582, <https://doi.org/10.1021/jacs.5c16945>



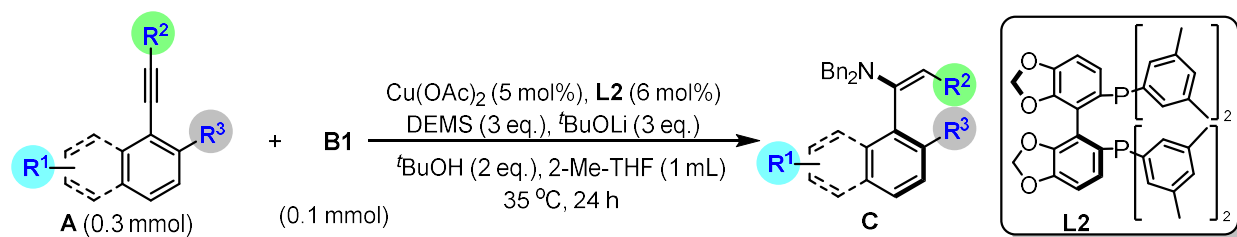
494. Atroposelective Synthesis of Enamine-Based Axially Chiral Styrenes via CuH-Catalyzed Hydroamination of Internal Alkynes

Zuyu Liang, Yijian Ma, Huanfeng Jiang, Chengshuo Shen, Pierre. H. Dixneuf, and Min Zhang
Angew. Chem. Int. Ed. **2025**, e202516510 (1 of 8); doi.org/10.1002/anie.202516510

c) Atroposelective hydroamination of internal alkynes (*This work*)

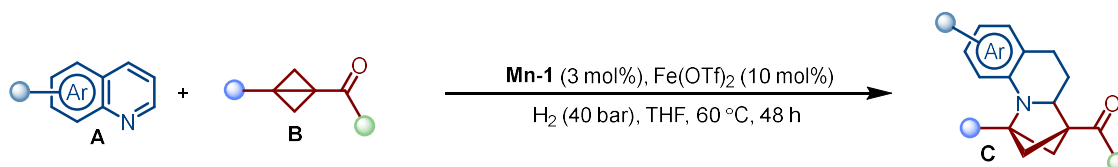


- ▲ broad substrate scope
- ▲ excellent regio- and *E*-selectivity
- ▲ high atroposelectivity
- ▲ enamine-based axially chiral styrenes
- ▲ new axially chiral aryl-acyclic alkene *N*, *P*-Ligand



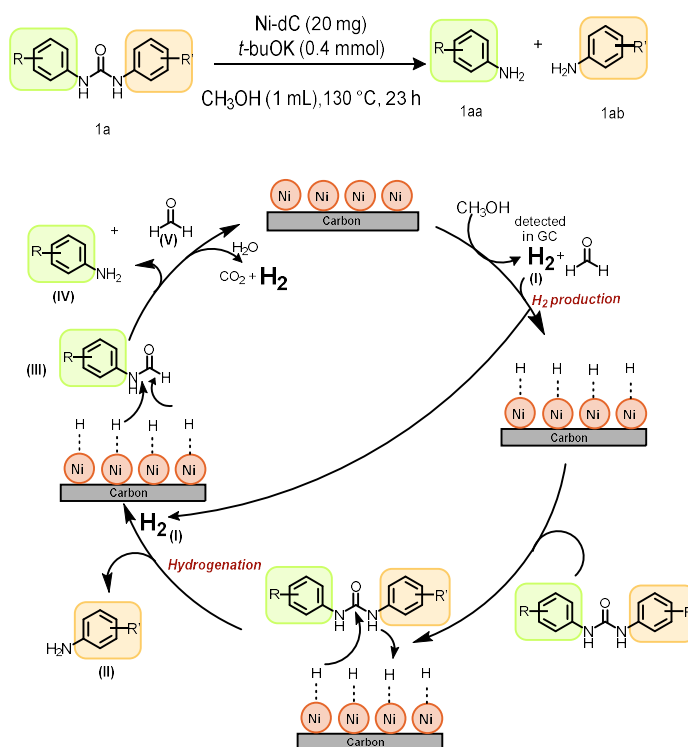
493. Direct Access to Functional 2-Azabicyclo[2.1.1]hexanes via Hydrodearomative $[2\pi + 2\sigma]$ Cycloaddition of Aza-arenes

Jian Yang, Bo-Xuan Yao, Huan-Feng Jiang, Shao-Fei Ni, Pierre H. Dixneuf, Min Zhang
Angew. Chem. Int. Ed. **2025**, e202505060 ; <https://doi.org/10.1002/anie.202505060>



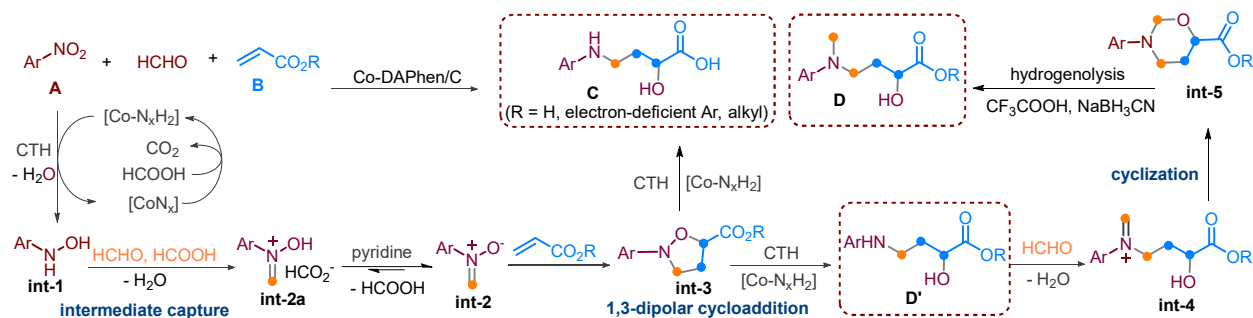
492. Nickel doped carbon nanomaterial Catalyzed Transfer Hydrogenation of Unsymmetrical Urea using Methanol as H_2 Source. Kiruthigadevi Kamaraj, Pierre H. Dixneuf, Ganesh Babu Sundaram, and Charles Beromeo Bheeter.

ChemCatChem **2025**, 0, e202401797 (1 of 7): doi.org/10.1002/cctc.202401797



491. Reduction-Interrupted Tandem Reaction for General Synthesis of Functional Amino Acids by a Heterogeneous Cobalt Catalyst

Haotian Hua, Chenggang Ci, Pierre H. Dixneuf, and Min Zhang*
J. Am. Chem. Soc. **2025**, 147, 6572–6582

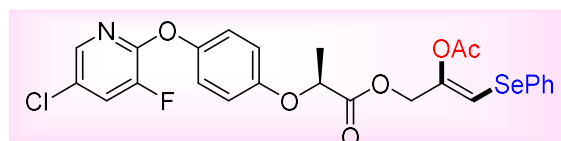
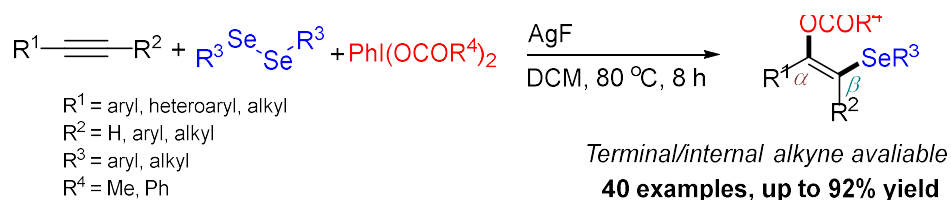


2024

490. Silver-Mediated Acetoxyselenylation of Alkynes: Mild Stereoselective Access to Bifunctional Alkenes

Xiaoyan Bai, Jiabin Chen, Hongxuan Du, Cong Zhao, Ya Li, Yibiao Li, Pierre H. Dixneuf, Min Zhang, and Lu Chen*

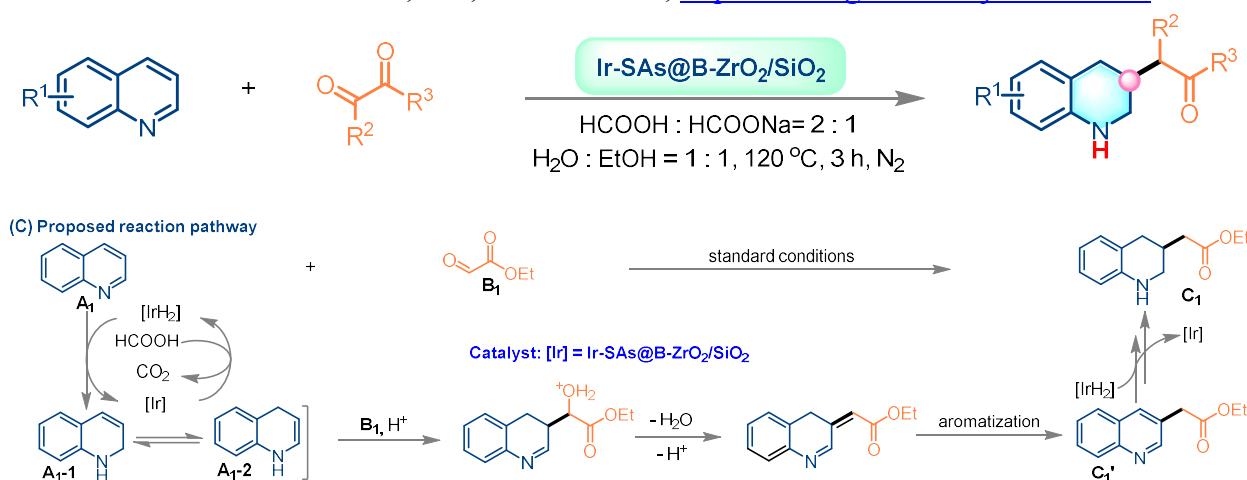
Org. Lett. **2024**, 26, 9811-9816; <https://doi.org/10.1021/acs.orglett.4c03178>



489. Reductive Coupling of N-Heteroarenes and 1,2-Dicarbonyls for Direct Access to γ -AminoAcids, Esters, and Ketones Using a Heterogeneous Single-Atom Iridium Catalyst

Huanhuan Jia, Qi Liao, Wei Liu, Luis A. Cipriano, Huanfeng Jiang, Pierre. H. Dixneuf, Gianvito Vilé, and Min Zhang*

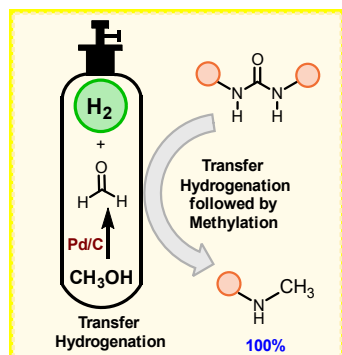
J. Am. Chem. Soc. **2024**, 146, 31647–31655, <https://doi.org/10.1021/jacs.4c09827>



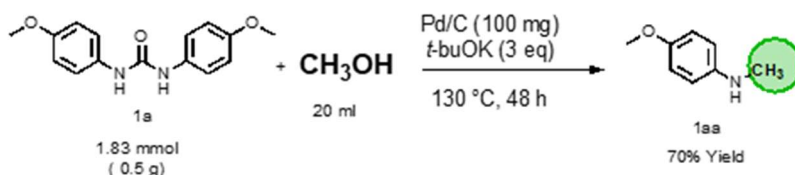
488. Pd/C-Catalyzed Selective *N*-Monomethylation by Transfer Hydrogenation of Urea Derivatives using Methanol as H₂ and C1 Sources

Kiruthigadevi Kamaraj, Pierre H. Dixneuf, Ganesh babu Sundaram, Joost N. H. Reek and Charles Beromeo Bheeter*

Chem. Eur. J. **2024**, e202402414 ; <https://doi.org/10.1002/chem.202402414>



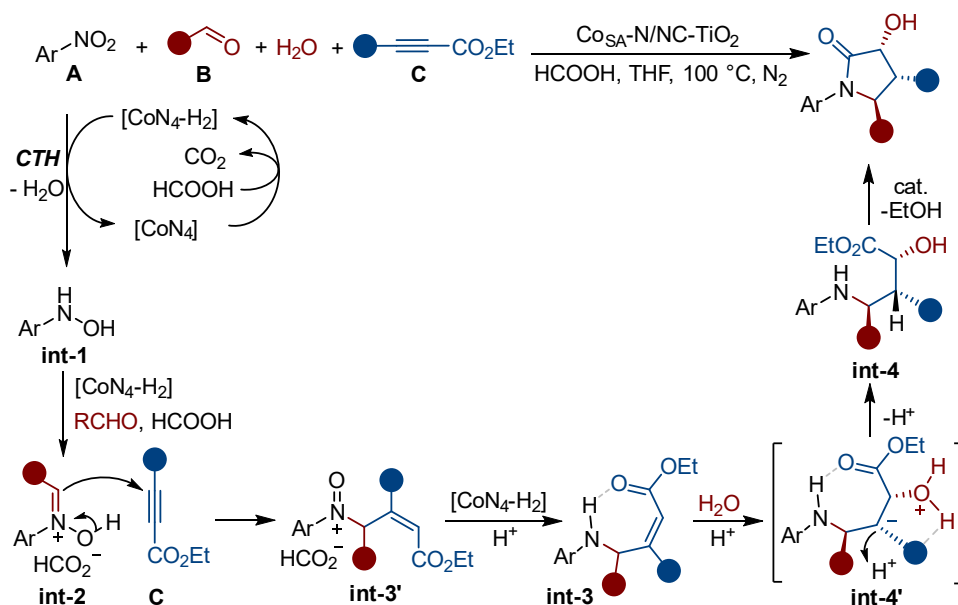
Gram-Scale Synthesis



487. Multicomponent Reductive Coupling for Selective Access to Functional γ -Lactams by a Single-Atom Cobalt Catalyst

Jia-Lu Sun, Huanfeng Jiang, Pierre. H. Dixneuf, and Min Zhang*

J. Am. Chem. Soc. **2024**, *146*, 11289–11298. <https://doi.org/10.1021/jacs.4c00547>

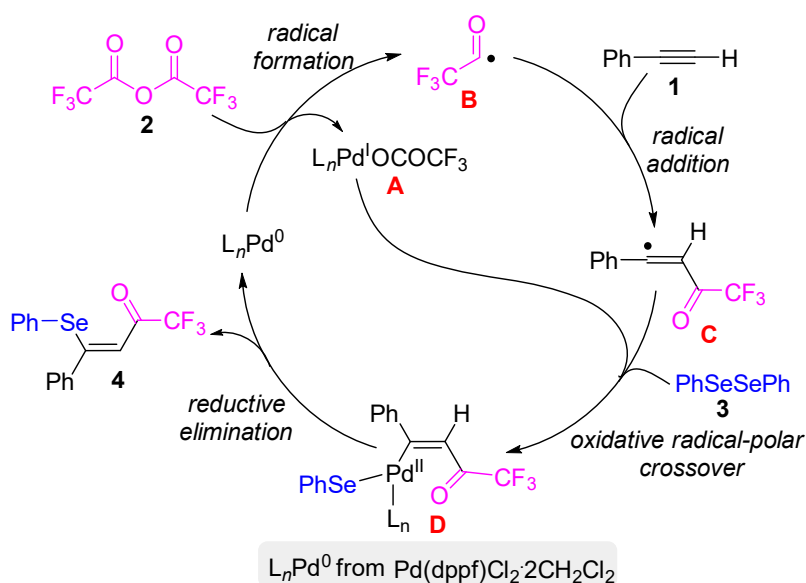
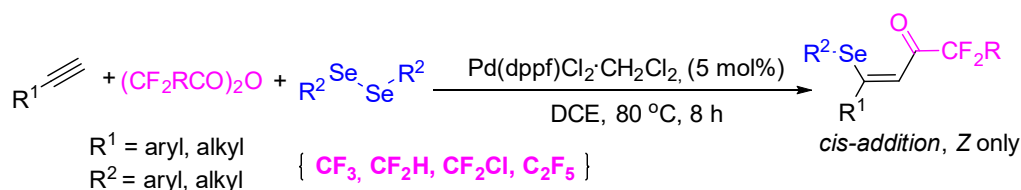


486. Selective Access to Functional Fluoroenones via Palladium-Catalyzed Selenofluoroalkylacylation of Terminal Alkynes

Ya Li, Dian Dong, Lintong Chen, Hongxuan Du, Cong Zhao, Xiaoyan Bai, Lu Chen,* Yibiao Li, Xianghua Zeng,* Pierre H. Dixneuf, and Min Zhang*

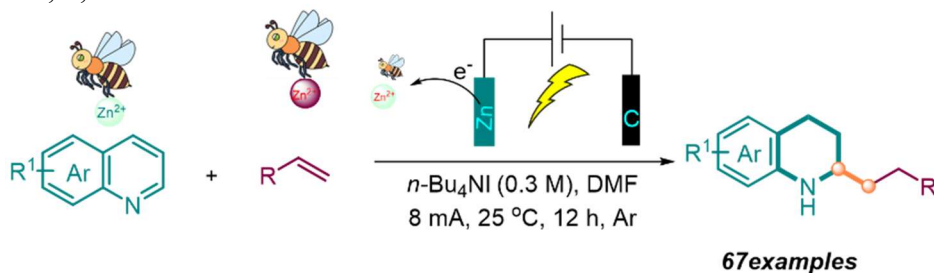
Org. Lett. **2024**, 26, 4, 906–911; <https://doi.org/10.1021/acs.orglett.3c04191>

Radical selenofluoroalkylation of alkynes



485. Room Temperature Electroreductive α -Alkylation of N-Heteroarenes with Styrenes

Maorui Wang, Chengqian Zhang, He Zhao, Huanfeng Jiang, Pierre. H. Dixneuf, and Min Zhang
CCS Chem. **2024**, 6, 342-352. DOI: 10.31635/ccschem.023.202303085.



- ♣ Direct and diverse synthesis
- ♣ Good regioselectivity
- ♣ Broad substrate scope

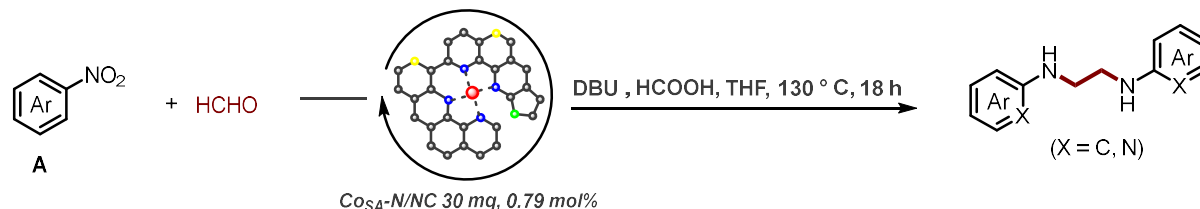
- ♣ No need for H_2 and TM catalysts
- ♣ Electricity as a green reductant
- ♣ Operational simplicity

2023

484. Reductive Coupling of Nitroarenes and HCHO for General Synthesis of Functional Ethane-1,2-diamines by a Cobalt Single Atom Catalyst

Jia-Lu Sun, Huanfeng Jiang, Pierre. H. Dixneuf, and Min Zhang*

J. Am. Chem. Soc. **2023**, 145, 17329–17336 ; <https://doi.org/10.1021/jacs.3c04857>

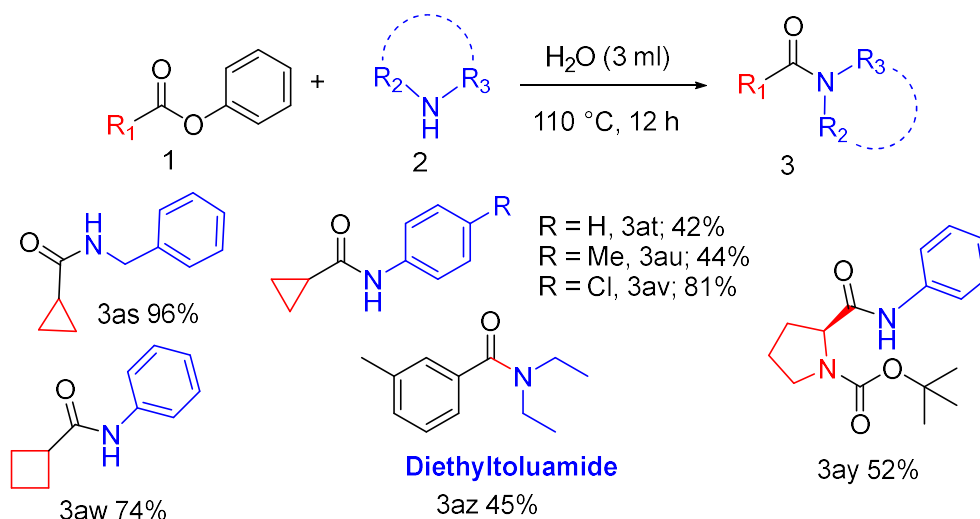


483. A sustainable metal and base-free direct amidation of esters using water as a green solvent†

Nanthini Rajendran, Kiruthigadevi Kamaraj, Saranya Janakiraman, Mary Saral, Pierre H.

Dixneuf and Charles Beromeo Bheeter

RSC Adv., **2023**, 13, 14958–14962.

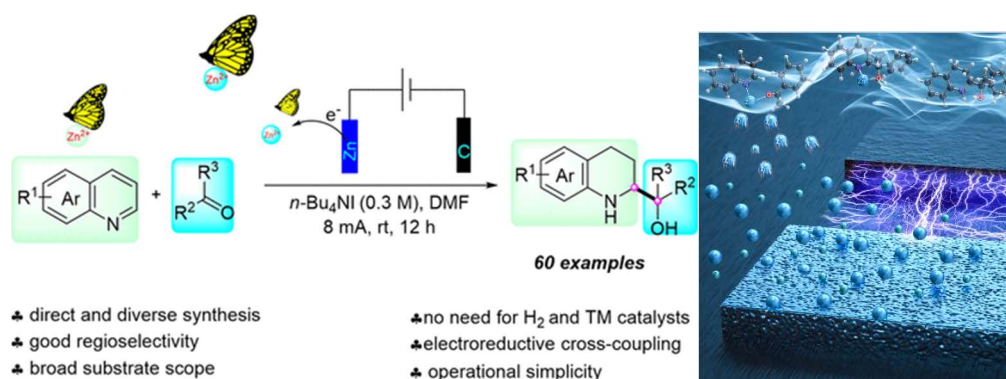


482. Room Temperature Construction of Vicinal Amino Alcohols via

Electroreductive Cross-Coupling of *N*-Heteroarenes and Carbonyls

Maorui Wang, Chengqian Zhang, Chenggang Ci, Huanfeng Jiang, Pierre. H. Dixneuf, and Min Zhang*

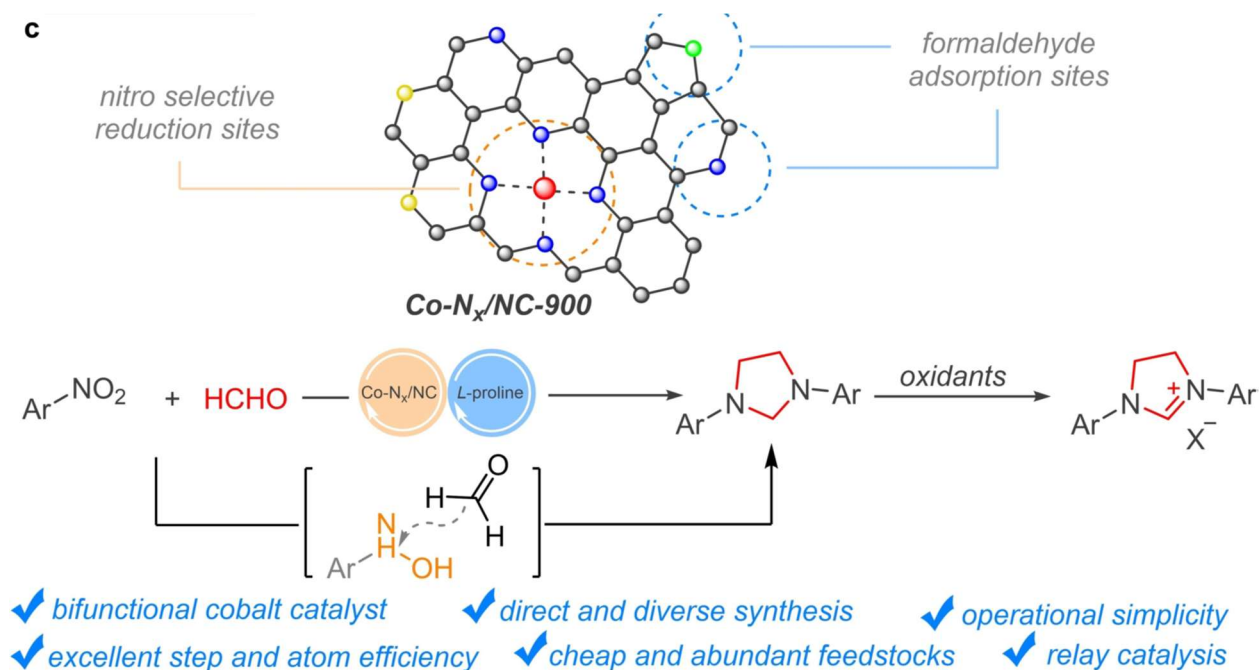
J. Am. Chem. Soc. **2023**, 145, 10967–10973; <https://doi.org/10.1021/jacs.3c02776>



481. Utilizing Nitroarenes and HCHO to Directly Construct Functional N-Heterocycles by Supported Cobalt/Amino Acid Relay Catalysis

Jia-Lu Sun, Chenggang Ci, Huanfeng Jiang, Pierre. H. Dixneuf, and Min Zhang*

Angew. Chem. Int. Ed. **2023**, e202303007 (1 of 7) ; doi.org/10.1002/anie.202303007

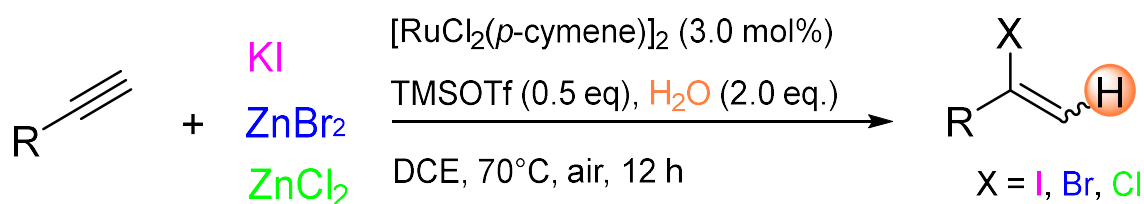


2022

480. Ruthenium-Catalyzed Regioselective Hydrohalogenation of Alkynes Mediated by Trimethylsilyl Triflate

Yuye Bai, Zhenyuan Lin, Zhenying Ye, Dian Dong, Jing Wang, Lu Chen,* Feng Xie, Yibiao Li, Pierre H. Dixneuf, Min Zhang*

Organic Letters; Manuscript ID: ol-2022-03158s.R3; accepted 20 october 2022



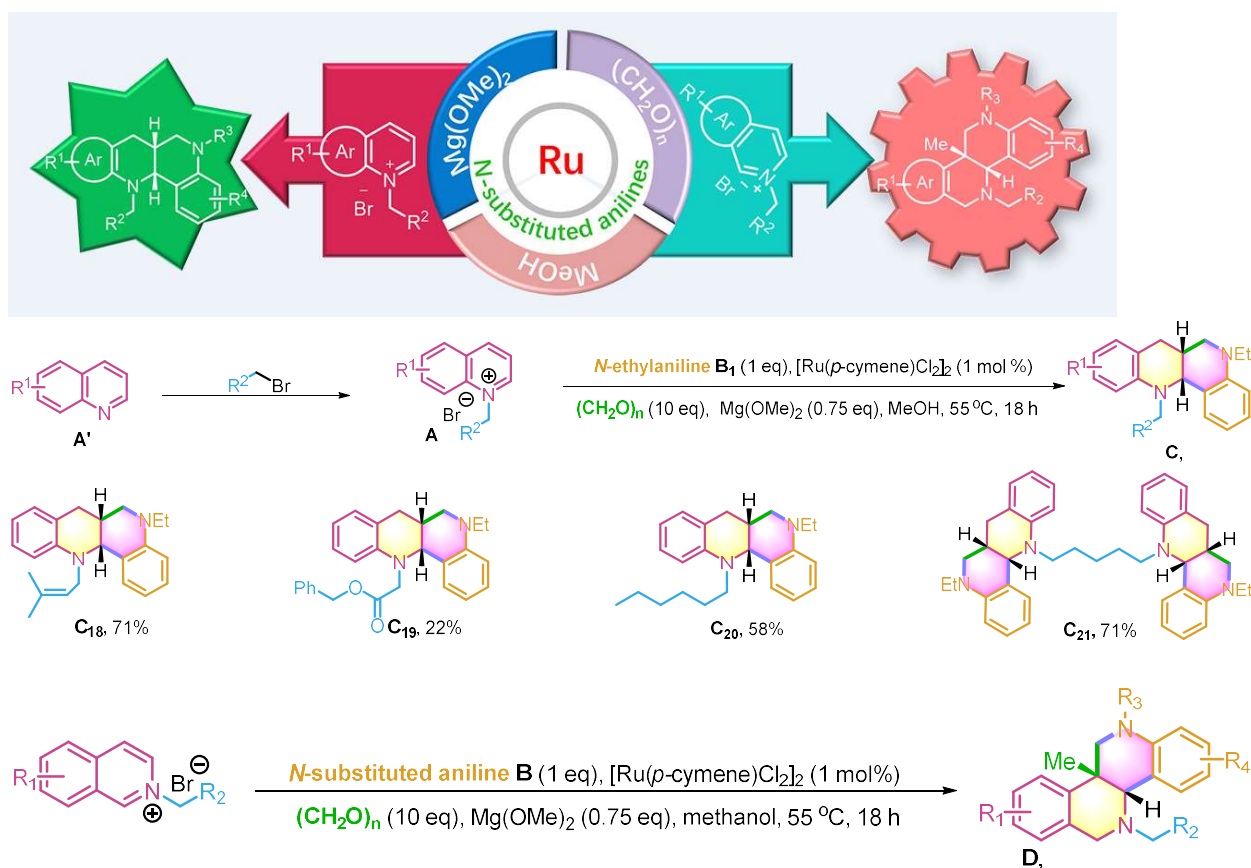
479. Transition-Metal-Catalyzed C–H bond Activation/Functionalization of Phosphines

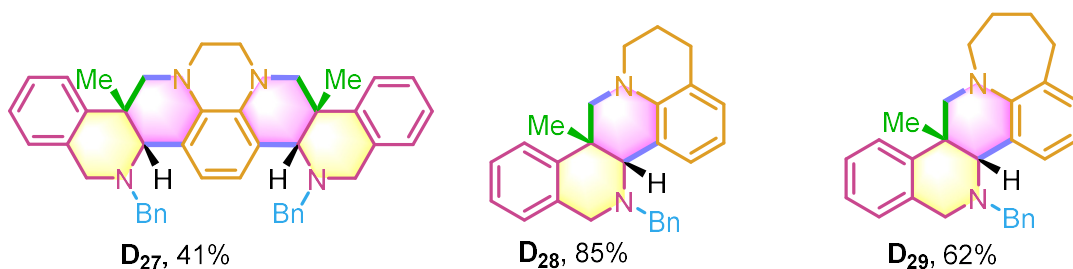
Pierre H. Dixneuf, Jean–François Soulé*, Book Chapter, Handbook of CH-Functionalization (CHF) Editor Debrabata Maiti, John Wiley & Sons, Ltd
Book chapter in the press

478. Intermolecular Diastereoselective Annulation of Azaarenes into Fused N-heterocycles by Ru(II) Reductive Catalysis

He Zhao, Yang Wu, Chenggang Ci, Zhenda Tan, Jian Yang, Huanfeng Jiang, Pierre H. Dixneuf, and Min Zhang*

Nature Commun. **2022**; 13:2393 ; [www.nahttps://doi.org/10.1038/s41467-022-29985-z](https://doi.org/10.1038/s41467-022-29985-z)



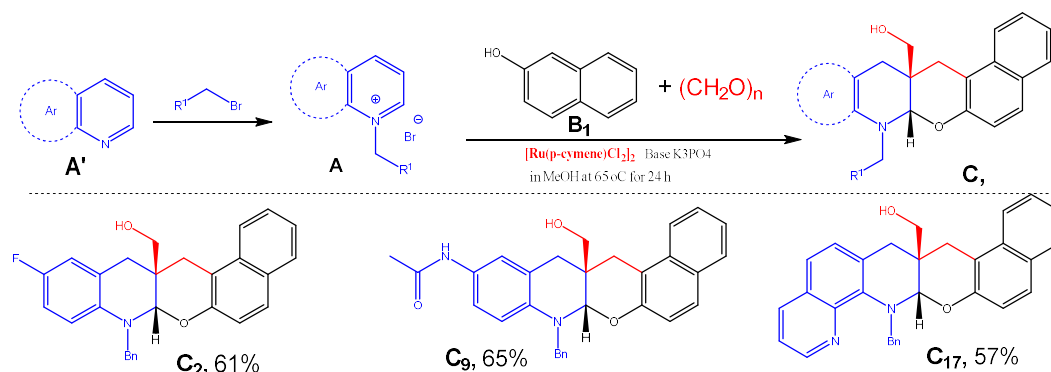


2021

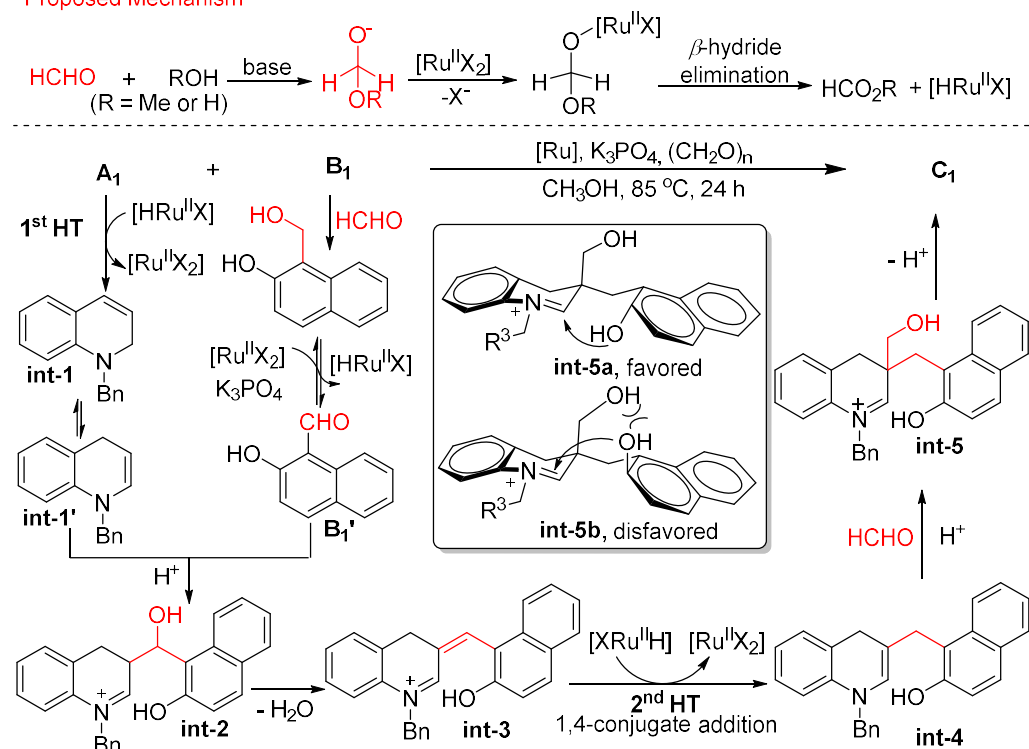
477. Syn-Selective Construction of Fused Heterocycles by Catalytic Reductive Tandem Functionalization of N-Heteroarenes

Jian Yang, He Zhao, Zhenda Tan, Liang Cao, Huanfeng Jiang, Chenggang Ci, Pierre H. Dixneuf, and Min Zhang

ACS Catal. **2021**, 11, 9271–9278 ; <https://doi.org/10.1021/acscatal.1c01328>

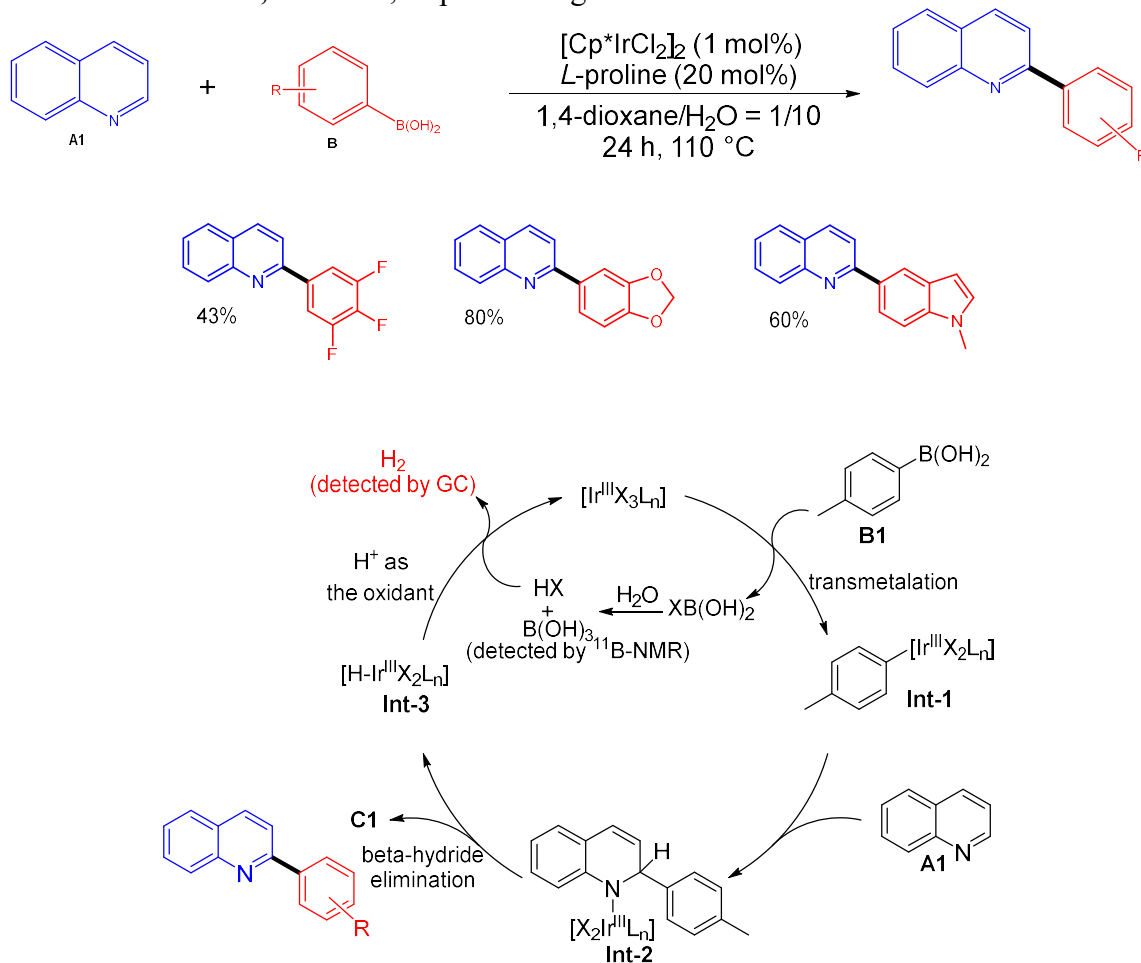


Proposed Mechanism



476. Practical Iridium-Catalyzed Direct α -arylation of N-heteroarenes with (Hetero)arylboronic Acids by H₂O-Mediated H₂ Evolution

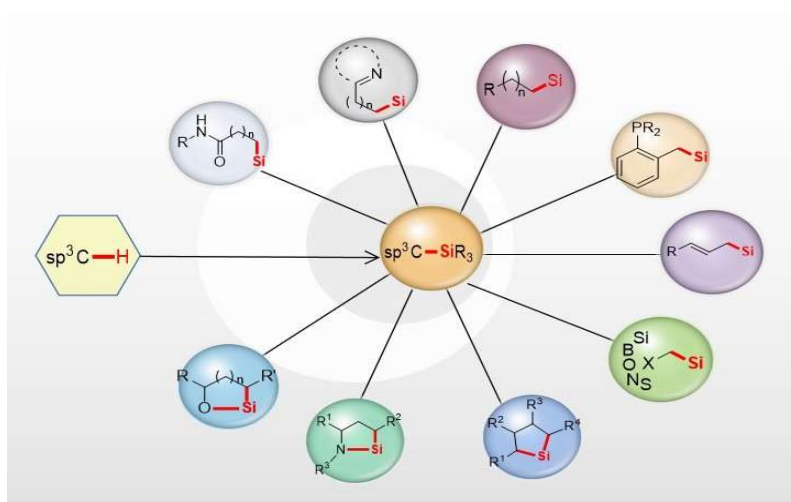
Liang Cao, He Zhao, Rongqing Guan, Huanfeng Jiang, Pierre. H. Dixneuf, and Min Zhang.
Nature Com. **2021**, 12:4206 ; <https://doi.org/10.1038/s41467-021-24468-z>



475. Metal-catalyzed silylation of sp³C-H bonds

Bin Li and Pierre H Dixneuf

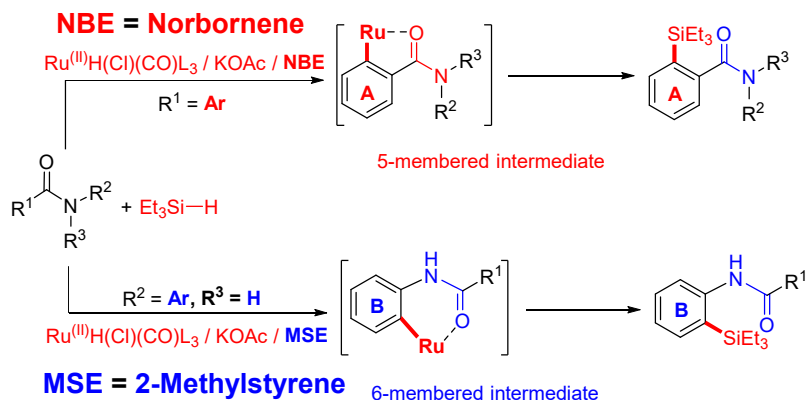
Chem. Soc. Rev. **2021**, 50, 5062-5085. DOI: 10.1039/D0CS01392G



474. Alkene as hydrogen trapper to control the regio-selective ruthenium(II) catalyzed ortho C-H silylation of amides and anilides.

Q. Lin, Z. Lin, M. Pan, Q. Zheng, H. Li, X. Chen, C. Darcel, P. H. Dixneuf, B. Li, *Org. Chem. Front.*, **2021**, 8, 514-521 ; DOI: 10.1039/D0QO01031F.

The Alkene allows or not the H₂ capture & the reaction to proceed



2020

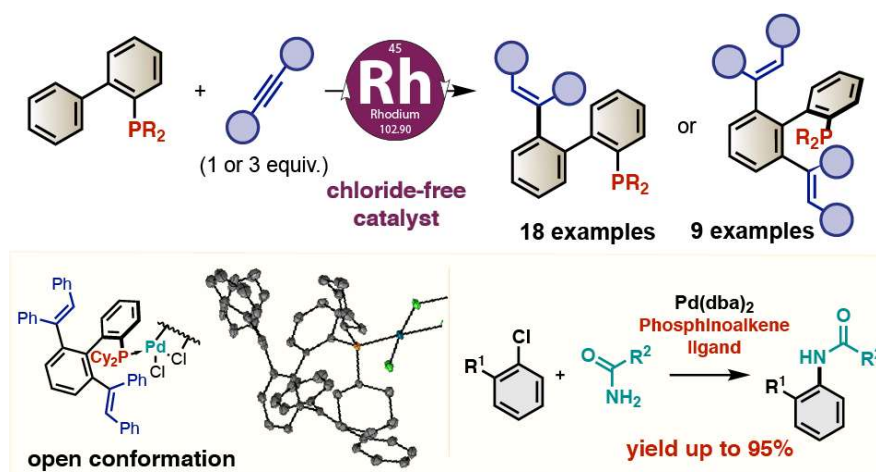
473. From a 175 year old Ruthenium to its empire on Green Catalysis and Sustainable Chemistry

P. H. Dixneuf, the Periodic Table celebratory book of the Portugal Academy of Sciences of **2020**, Page 40-52.

http://www.acad-ciencias.pt/document-uploads/6297027_periodic-table.-symposium-dec11-final.pdf

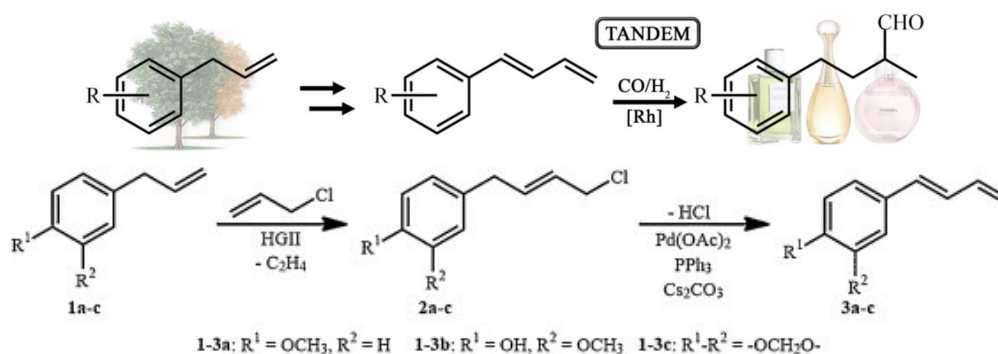
472. Late-Stage Diversification of Biarylphosphines through Rhodium(I)-Catalyzed C–H Bond Alkenylation with Internal Alkynes. Zhuan Zhang, Marie Cordier, Pierre H. Dixneuf, and Jean-François Soulé.

Org. Lett. **2020**, 22, 5936-5940.



471. Tandem hydroformylation/isomerization/hydrogenation of bio-derived 1-arylbutadienes for the regioselective synthesis of branched aldehydes

Gabriel M. Vieira, Artur V. Granato, Elena V. Gusevskaya, Eduardo N. dos Santos, Pierre H. Dixneuf, Cédric Fischmeister, Christian Bruneau
Applied Catalysis A: General, **2020**, Volume 598, 117583;
<https://doi.org/10.1016/j.apcata.2020.117583>



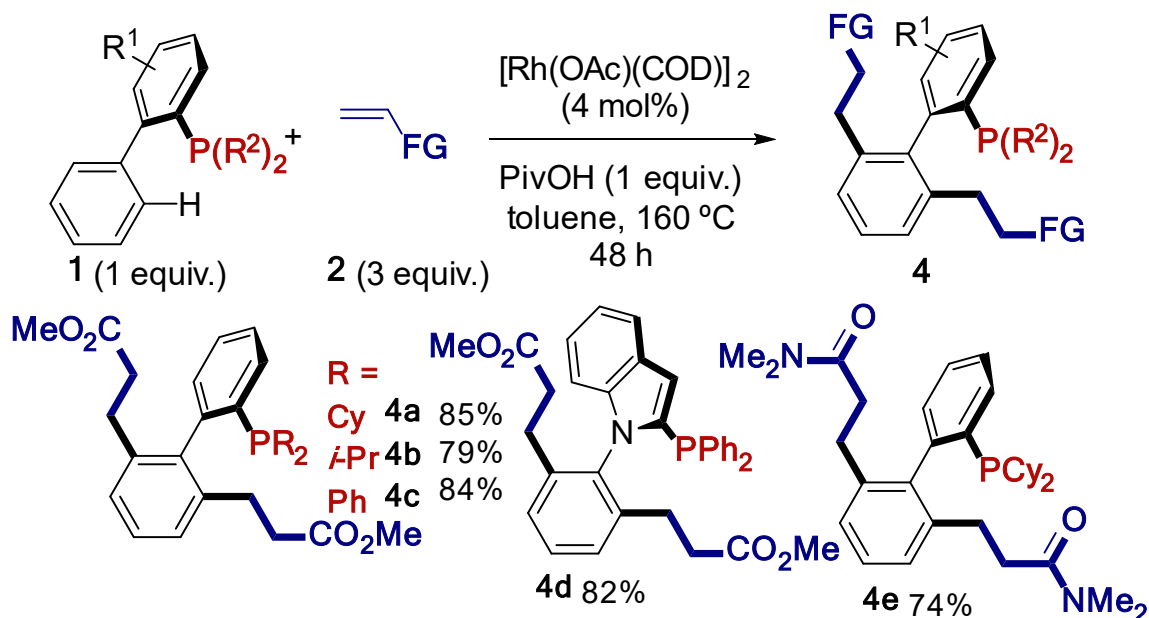
2019

470. Rh(I)-Catalyzed P(III)-Directed C–H Bond Alkylation: Design of Multifunctional Phosphines.

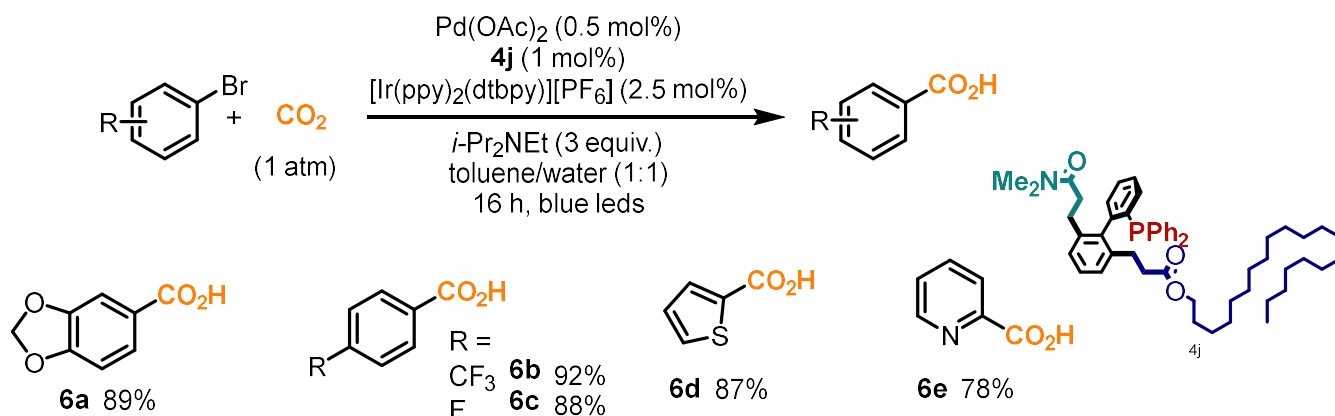
for Carboxylation of Aryl Bromides with Carbon Dioxide

Zhuan Zhang, Thierry Roisnel, Pierre H. Dixneuf, Jean-François Soulé

Angew. Chem. Int. Ed. **2019**, 58,14110–14114. <https://doi.org/10.1002/anie.201906913>

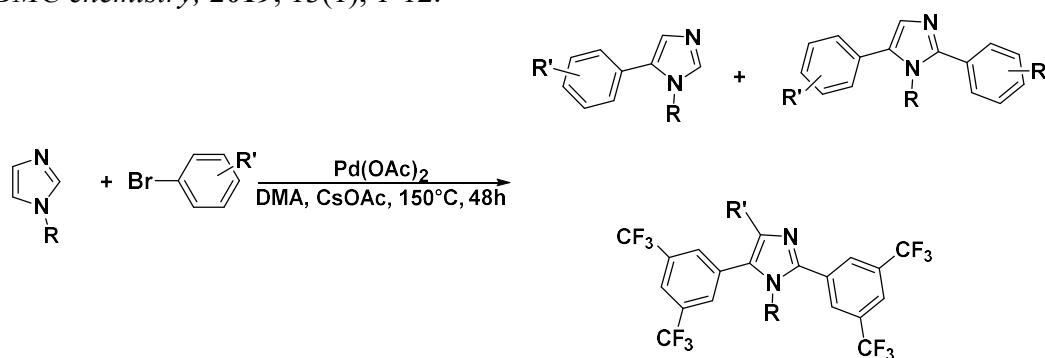


Carboxylation of Aryl Bromides with Carbon Dioxide with Pd catalyst and photoredox system.

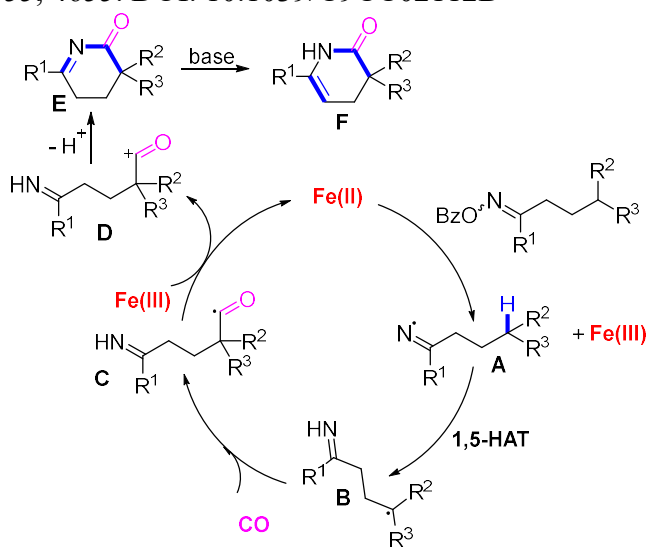


469. Identification of novel antifungal agents: antimicrobial evaluation, SAR, ADME-Tox and molecular docking studies of a series of imidazole derivatives.

B. Bouchal, F. Abrigach, A. Takfaoui, M. E. Errahhali, P. H. Dixneuf, H. Doucet, R. Touzani and M. Bellaoui
BMC chemistry, **2019**, 13(1), 1-12.

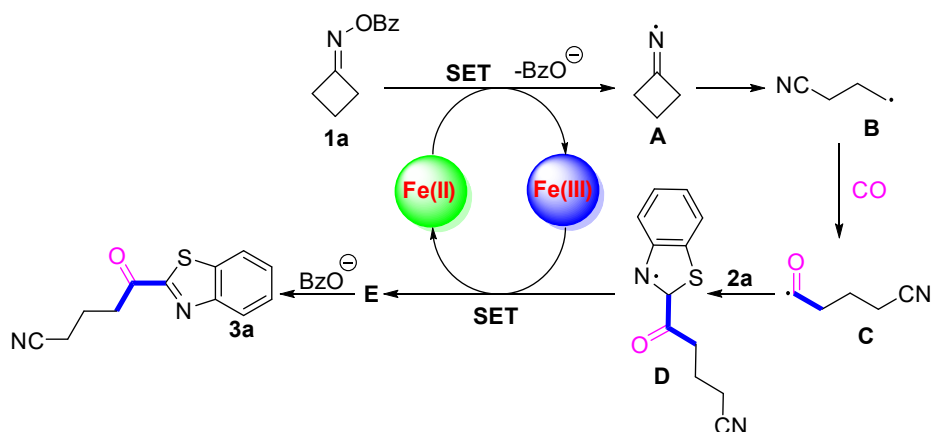


468..Carbonylation of Tertiary Carbon Radical: Synthesis of Lactams
 Zhiping Yin, Zhuan Zhang, Youcan Zhang, Pierre H. Dixneuf, and Xiao-Feng Wu
Chem. Commun. **2019**, 55, 4655. DOI: 10.1039/C9CC02112D



467..Iron-Catalyzed Carbonylative Alkyl-Acylation of Heteroarenes

Zhiping Yin; Zhuan Zhang; Jean-François Soulé; Pierre H Dixneuf, Xiao-Feng Wu,
J. Catal. **2019**, *372*, 272-276. doi.org/10.1016/j.jcat.2019.03.001



466..Book "Organometallics for Green Catalysis ",
 P. H. Dixneuf, J. F. Soulé Eds.,
 Topics in Organometallic Chemistry, Springer, volume 63, **2019**.
 ISSN 1436-6002 ISSN 1616-8534 (electronic),
 ISBN 978-3-030-10954-7 ISBN 978-3-030-10955-4 (eBook)
 doi.org/10.1007/978-3-030-10955-4

Topics in Organometallic Chemistry 63

Pierre H. Dixneuf
Jean-François Soulé *Editors*

Organometallics for Green Catalysis

 Springer

Contents

Metal-Catalysed Hydrogenation of CO ₂ into Methanol	1
Maximilian Franz Hertrich and Matthias Beller	
Catalytic Processes Combining CO ₂ and Alkenes into Value-Added Chemicals	17
Marc Schmitz, Matilde V. Solmi, and Walter Leitner	
Recent Advances on CO ₂ Utilization as C1 Building Block in C-N and C-O Bond Formation	39
Kassem Beydoun and Jürgen Klankermayer	
Alkene Metathesis for Transformations of Renewables	77
Christian Bruneau and Cédric Fischmeister	
Metal-Catalyzed Aromatic C-O Bond Activation/Transformation	103
Mamoru Tobisu and Naoto Chatani	
Hydrogenation/Dehydrogenation of Unsaturated Bonds with Iron Pincer Catalysis	141
William D. Jones	
Conversion of Alcohols to Carboxylates Using Water and Base with H ₂ Liberation	175
Peng Hu and David Milstein	
Selective Transfer Hydrogenation of α,β -Unsaturated Carbonyl Compounds	193
Ronald A. Farrar-Tobar, Sergey Tin, and Johannes G. de Vries	
Functionalization of C(sp ²)-H Bonds of Arenes and Heteroarenes Assisted by Photoredox Catalysts for the C-C Bond Formation	225
Pierre H. Dixneuf and Jean-François Soule'	

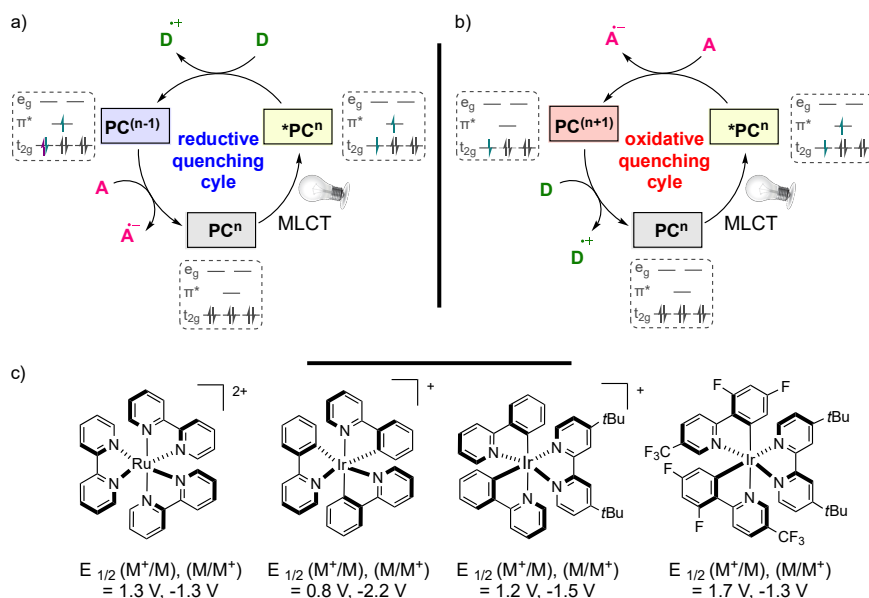
465..Book Chapter

Functionalizations of C(sp²)-H Bonds of Heterocycles and Arenes
Assisted with Photoredox-Catalysts for the C-C Bond Formation

P. H. Dixneuf, J.-F. Soulé

In "Organometallics for Green Catalysis ", P. H. Dixneuf, J. F. Soulé Eds.,

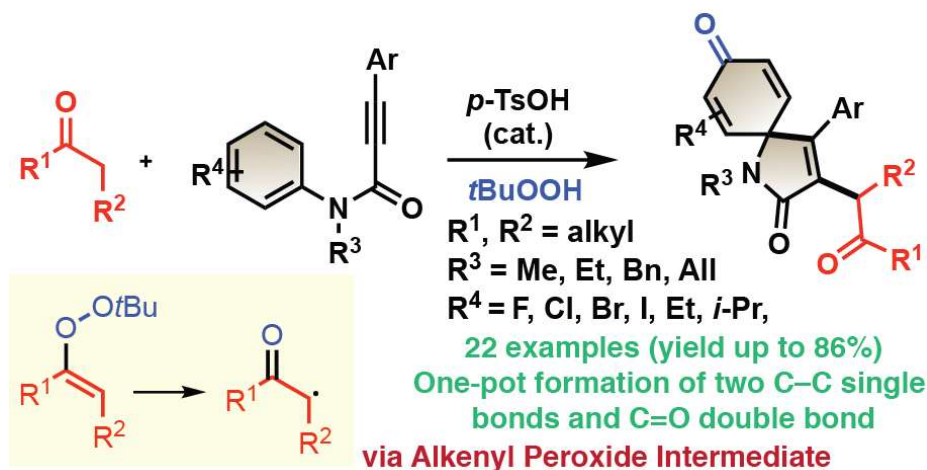
Top. Organomet. Chem., Springer, **2019**, Vol 63, 225 – 265. DOI : [10.1007/3418_2018_22](https://doi.org/10.1007/3418_2018_22)



464. Access to 3-(2-Oxoalkyl)-azaspiro[4.5]trienones via Acid-Triggered Oxidative Cascade Reactions through Alkenyl Peroxide Radical Intermediate

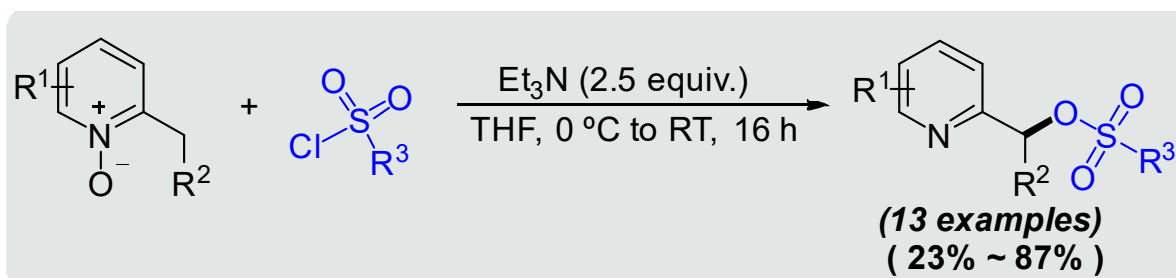
C.-S. Wang, T. Roisnel, P. H. Dixneuf, J.-F. Soulé,

Adv. Synth. Catal. **2019**, 361, 445–450; DOI: [10.1002/adsc.201801203](https://doi.org/10.1002/adsc.201801203)

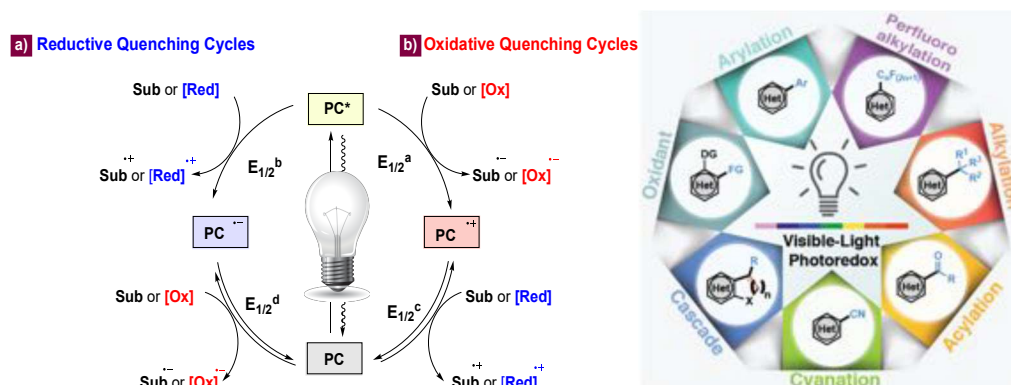


463. Transformations of Terpenes via Carbon-Carbon Double Bond Metathesis
 Bruneau, christian; Fischmeister, Cédric; Mandelli, Dalmo; Carvalho, Wagner;
 dos Santos, Eduardo; Dixneuf, pierre; Sarmento Fernandes, Luciana
Catal. Sci. Technol., **2018**, 8, 3989-4004, CY-MRV-06-2018-001152.R1

462. Metal-Free C(sp³)-H Bond Sulfonyloxylation of 2-Alkylpyridines and Alkyl nitrones
 Chang-Sheng Wang, Pierre H. Dixneuf, and Jean-François Soulé –
Organic & Biomolecular Chemistry **2018**, 6, 4954–4957 DOI: 10.1039/c8ob01075g



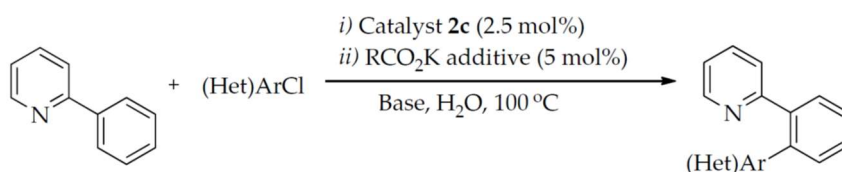
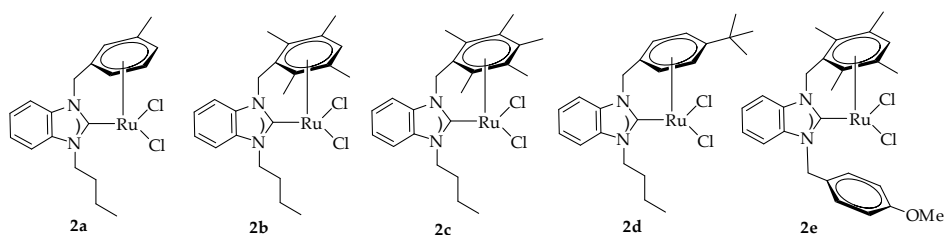
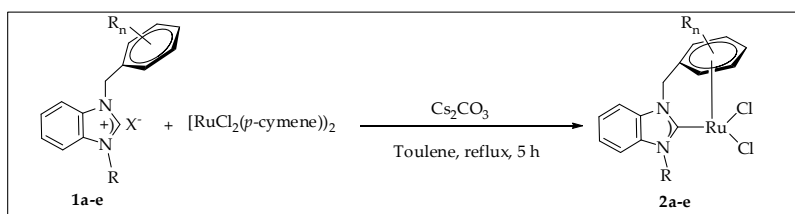
461. Photoredox Catalysis for Building C–C Bonds from C(sp²)-H Bonds
 Chang-Sheng Wang, Pierre H. Dixneuf, and Jean-François Soulé
Chem. Rev. **2018**, 118, 7532-7585. DOI: 10.1021/acs.chemrev.8b00077



460. Late Stage Modifications of P-Containing Ligands using Transition-Metal-Catalysed C–H Bond Functionalisation ,
 Zhuan Zhang, Pierre H Dixneuf and Jean-Francois Soule ,
 Feature Article, *Chem. Commun.*, **2018**, 54, 7265 – 7280 DOI: [10.1039/C8CC02821D](https://doi.org/10.1039/C8CC02821D)



459. Ruthenium (n^6, n^1 -arene-CH₂-NHC) Catalysts for Direct Arylation of 2-Phenylpyridine with (Hetero)Aryl Chlorides in Water,
 Nazan Kaloğlu, İsmail Özdemir, Nevin Gürbüz, Hakan Arslan and Pierre H. Dixneuf,
Molecules **2018**, 23, 647-661; doi:10.3390/molecules23030647

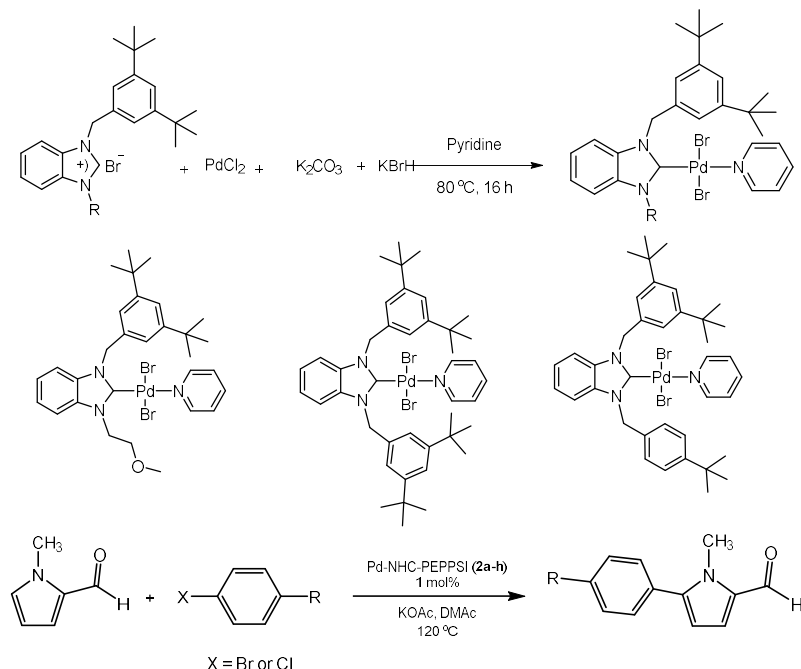


458.Synthesis of *N*-Heterocyclic Carbene-Palladium-PEPPSI Complexes and Their Catalytic Activity in The Direct C-H Bond Activation

Nazan Kaloğlu, Murat Kaloğlu, Muhammad Nawaz Tahir, Cengiz Arıcı, Christian Bruneau,

Henri Doucet, Pierre H. Dixneuf, Bekir Çetinkaya, and İsmail Özdemir

J. Organomet. Chem. **2018**, 867, 404-412. doi.org/10.1016/j.jorganchem.2017.10.019



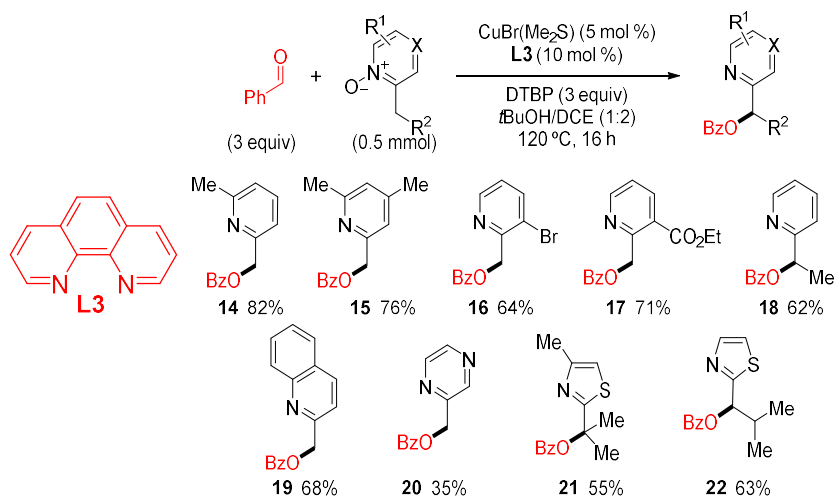
2017

457.Synthesis of 2-Pyridinemethyl Ester Derivatives from Aldehydes and 2-Alkylheterocycle N-Oxides

via Copper-Catalyzed Tandem Oxidative Coupling – Rearrangement

Wang, Chang-Sheng; Roisnel, Thierry; Dixneuf, Pierre; Soulé, Jean-François

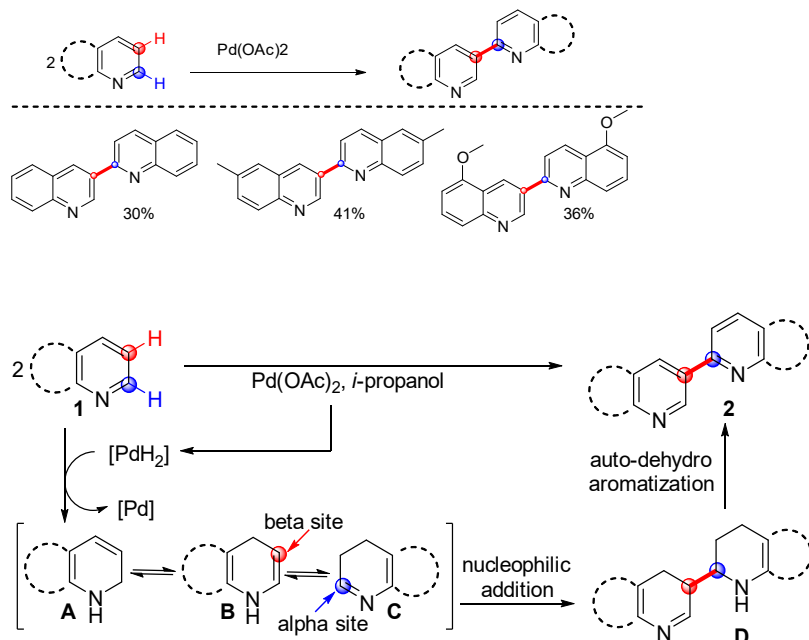
Org. Lett. **2017**, 19, 6720–6723. DOI: [10.1021/acs.orglett.7b03446](https://doi.org/10.1021/acs.orglett.7b03446)



456. Selective synthesis of nitrogen bi-heteroarenes by a hydrogen transfer-mediated direct α,β -coupling reaction

Xiu-Wen Chen, He Zhao, Biao Xiong, Huan-Feng Jiang, Pierre. H. Dixneuf and Min Zhang.

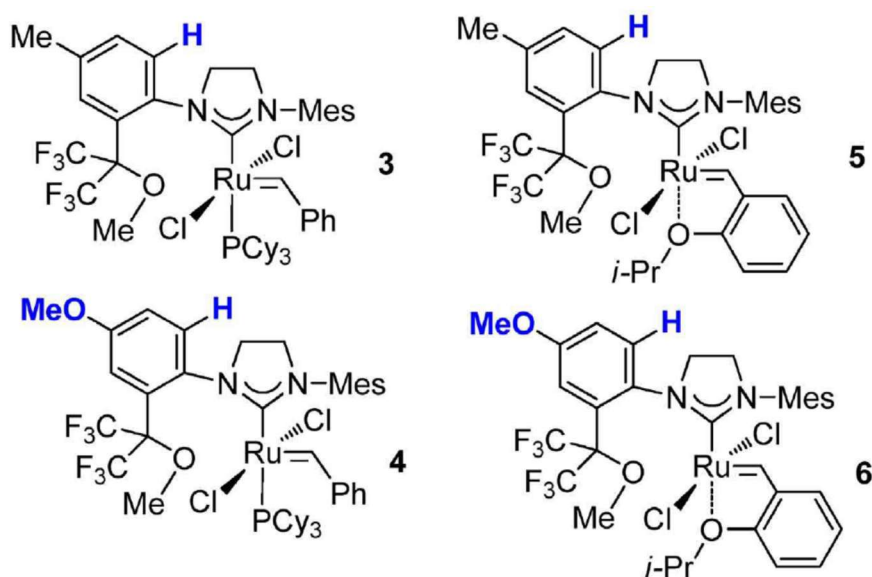
Org. Biomol. Chem., **2017**, 15, 6093–6097. DOI: 10.1039/c7ob01434a



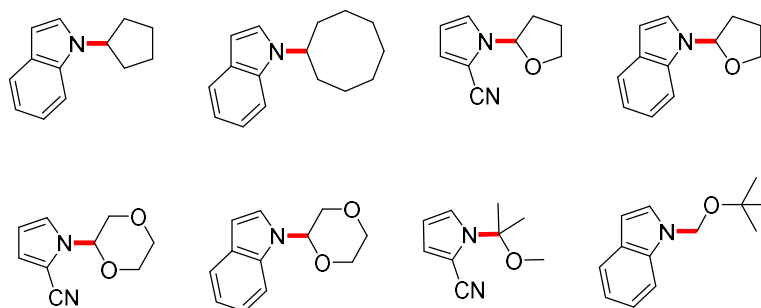
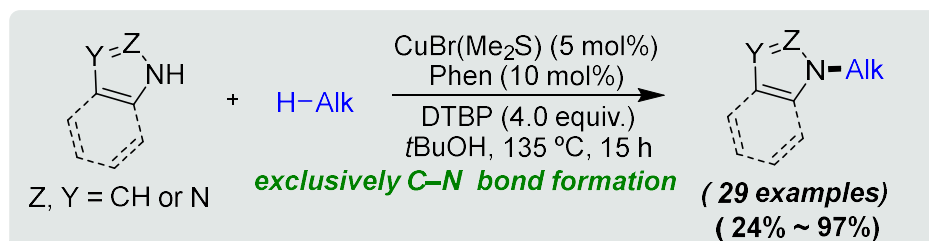
455. Synthesis of metathesis catalysts with fluorinated unsymmetrical N,N' -diarylimidazoline-based NHC ligand

S. M. Masoud, M. A. Topchiy, A. S. Peregodova, T. Roisnel, P. H. Dixneuf, C. Bruneau, S. N. Osipov

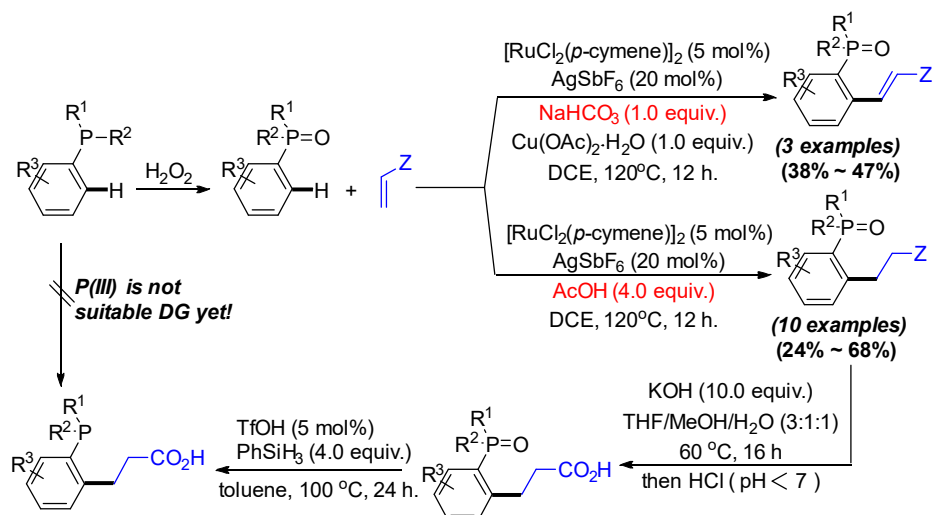
J. Fluorine Chem. **2017**, 200, 66-76. DOI: 10.1016/j.jfluchem.2017.06.004



454. Copper-Catalyzed Oxidative Dehydrogenative C(sp³)-H Bond Amination of (Cyclo)Alkanes using NH-Heterocycles as Amine Sources
 Chang-Sheng Wang, Xiao-Feng Wu, Pierre H. Dixneuf, and Jean-François Soulé.
ChemSusChem **2017**, 10, 3075 – 3082. DOI : 10.1002/cssc.201700783



453. Ruthenium-Catalyzed C-H Bond Alkylation of Arylphosphine Oxides with Alkenes:
 A Straightforward Access to Bifunctional Phosphorous Ligands with a Pendent Carboxylate
 Changsheng Wang, Pierre H. Dixneuf, Jean François Soulé,
ChemCatChem, **2017**, 9, 3117-3120. DOI: 10.1002/cctc.201700557R1

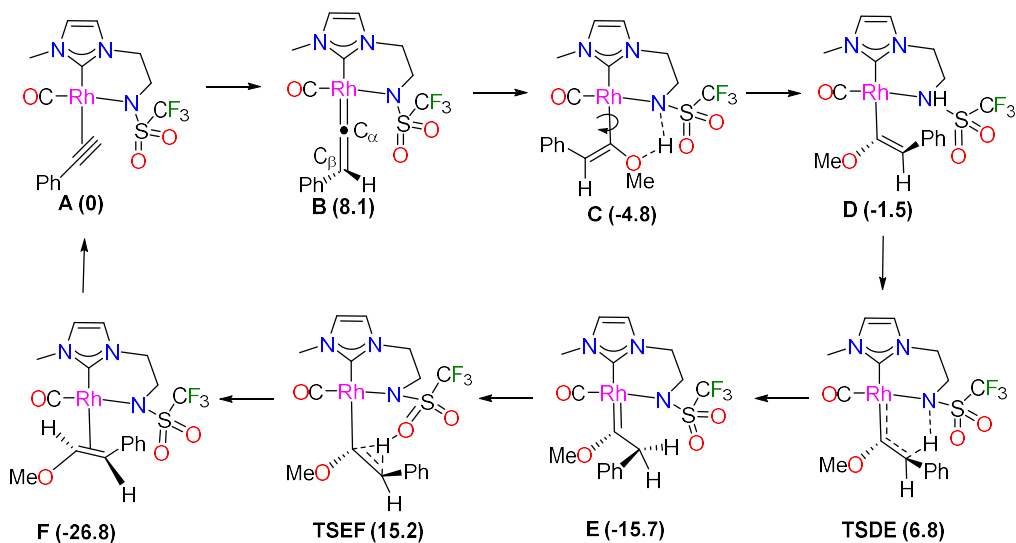


452. A Triflamide-tethered NHC–Rh(I) Catalyst for Hydroalkoxylation Reactions: Ligand Promoted Nucleophilic Activation of Alcohols

Abir Sarbajna, Pragati Pandey, S. M. Wahidur Rahaman, Kuldeep Singh, Akshi

Tyagi, Pierre H. Dixneuf, and Jitendra. K. Bera.

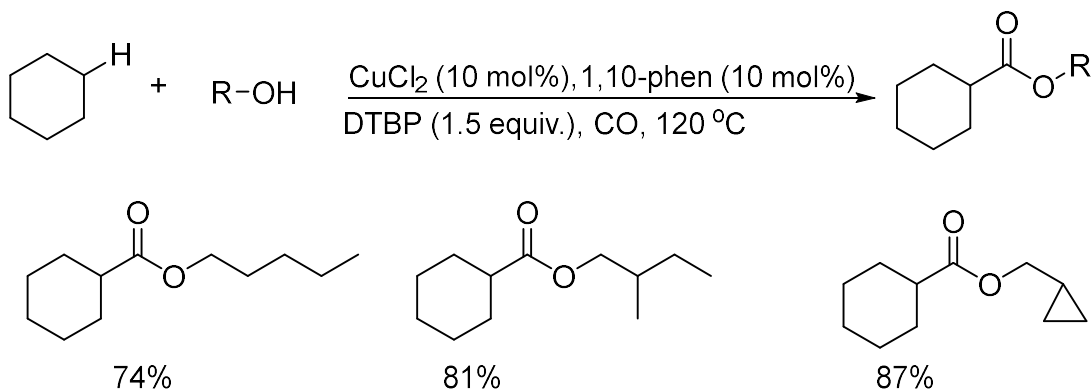
ChemCatChem **2017**, 9, 1397 – 1401. DOI : 10.1002/cctc.201601667



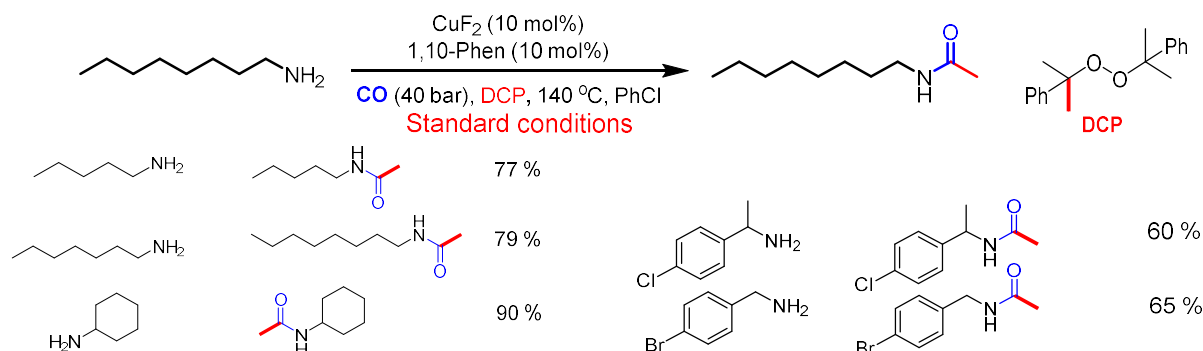
451. Copper-Catalyzed Alkoxy carbonylation of Alkanes with Alcohols

Yahui Li, Changsheng Wang, Fengxiang Zhu, Zechao Wang, Pierre H. Dixneuf, Xiao-Feng Wu

ChemSusChem **2017**, 10, 1341 – 1345 <http://dx.doi.org/10.1002/cssc.201601587>

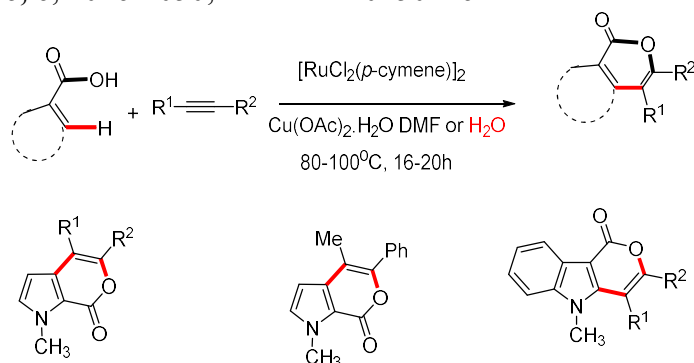


450. An Unexpected Copper-Catalyzed Carbonylative Acetylation of Amines
 Yahui Li, Changsheng Wang, Fengxiang Zhu, Zechao Wang, Jean François Soulé, Pierre H. Dixneuf, Xiao-Feng Wu
Chem. Commun. **2017**, 53, 142-144. DOI: 10.1039/C6CC08929A.

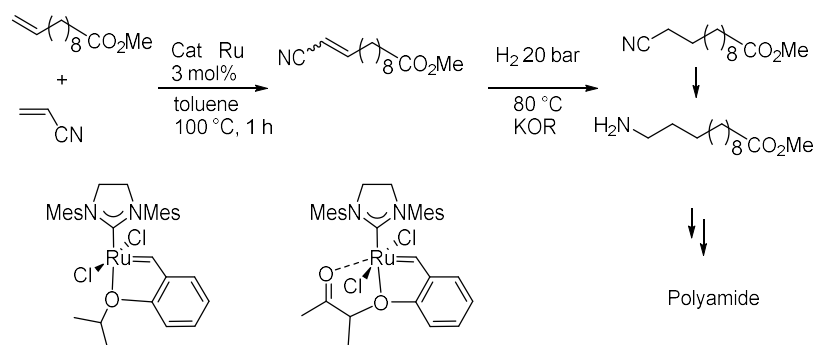


2016

449. Ruthenium(II) catalysed synthesis of pyrrole and indole fused isocoumarins via C-H bond activation in DMF and water
 Keisham S. Singh, Sneha G. Sawant, Pierre H. Dixneuf
ChemCatChem, **2016**, 6, 1046-1050; DOI cctc.201501261R1



448. Review *Dedicated to Yves Chauvin*
 Alkene metathesis catalysis: a key for transformations of unsaturated plant oils and renewable derivatives.
 Pierre H. Dixneuf, Christian Bruneau, Cédric Fischmeister
Oil & Gas Sci. Technol. – Rev. IFP Energies nouvelles, **2016**, 71, 19-40 pages
 DOI: 10.2516/ogst/2015033



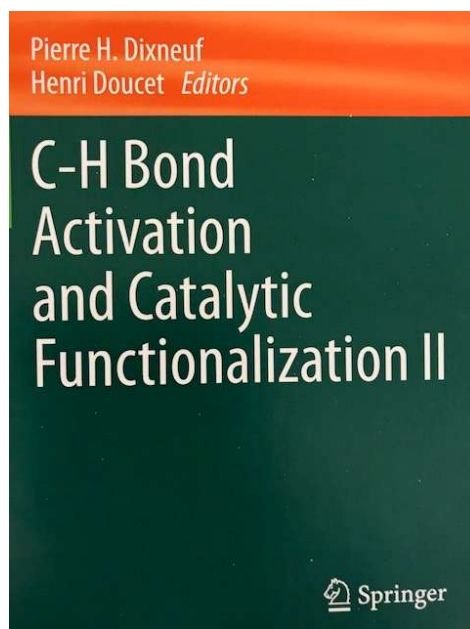
447. Book

C-H Bond Activation and catalytic functionalization, volume II

P. H. Dixneuf, H. Doucet Eds.,

Topics in Organometallic Chemistry series, Springer, **2016**, 56, Volume II,

ISBN: 978-3-319-24802-8 (Print) 978-3-319-29319-6 (Online)



2015

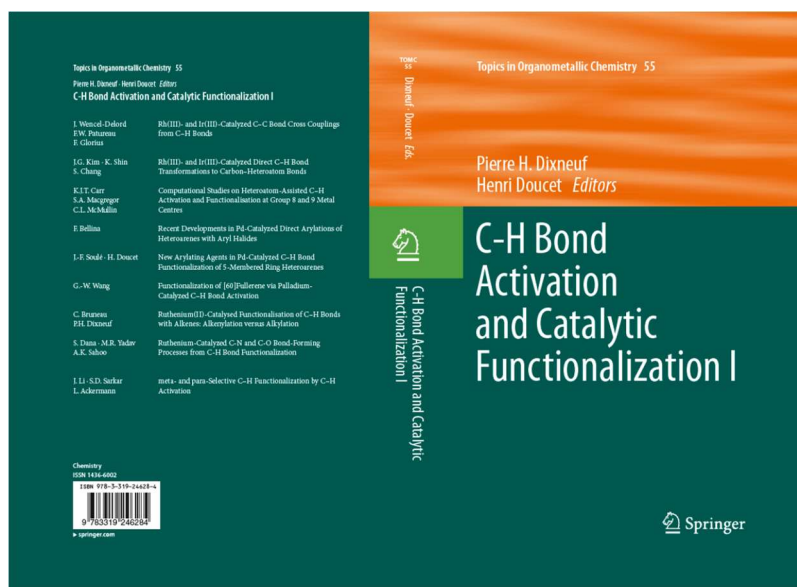
446. Book

C-H Bond Activation and catalytic functionalization I,

P. H. Dixneuf, H. Doucet Eds.,

Topics in Organometallic Chemistry series, Springer, **2015**, 55, Volume I,

ISSN 1436-6002; ISBN 978-3-319-24628-4

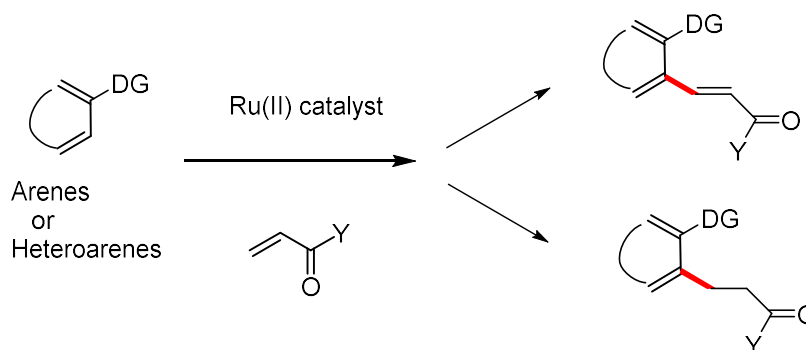


445.Book Chapter

Ruthenium(II)-catalyzed functionalization of C-H bonds with alkenes: alkenylation *versus* alkylation"

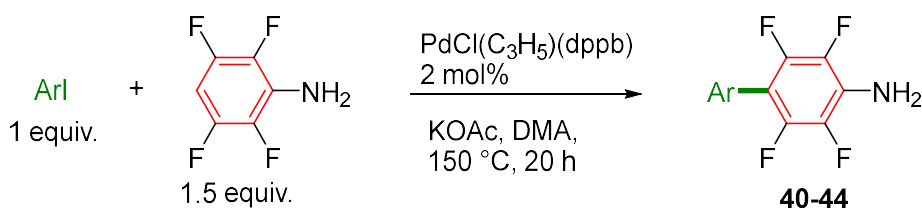
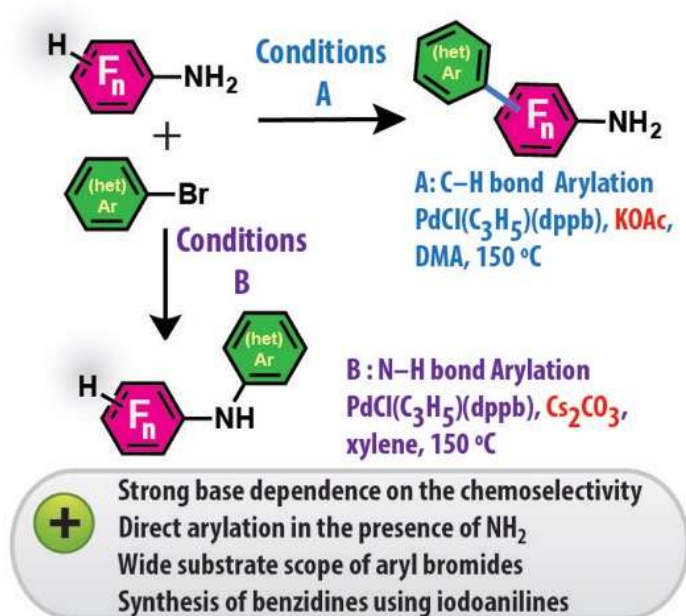
Christian Bruneau and Pierre H. Dixneuf, in "C-H Bond Activation and catalytic functionalization", P. H. Dixneuf, H. Doucet Eds., Top. OrganoMet. Chem., Springer, 2015, 55, volume I, 137-188. ISSN 1436-6002; ISBN 978-3-319-24628-4

Dedicated to Guy Lavigne



444. Palladium-Catalysed Direct Arylation using Free-Amine-Substituted Polyfluoroanilines with Inhibition of Amination-Type Reaction

Abdelilah Takfaoui, Rachid Touzani, Jean-François Soulé, Pierre H. Dixneuf, Henri Doucet Asian J. Org. Chem. 2015, 4, 1085-1095; DOI: 10.1002/ajoc.201500268.

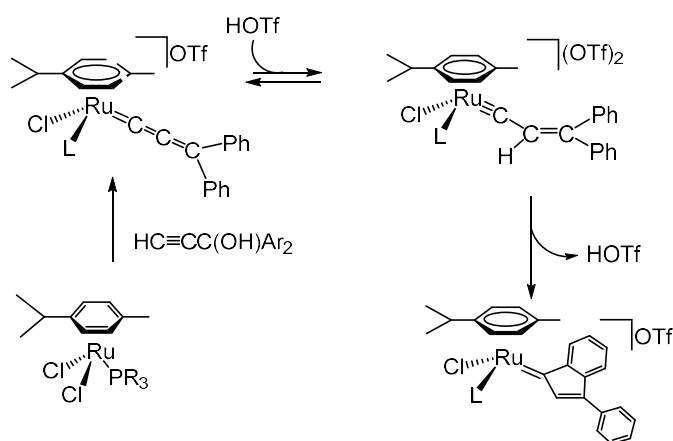


443. Book Chapter

Ruthenium Indenylidene Catalysts for Alkene Metathesis

P. H. Dixneuf, C. Bruneau

in "Handbook of Metathesis, Volume 1: Catalyst Development and Mechanism", R. H. Grubbs, A. G. Wenzel Eds., Wiley VCH, Weinheim, 2nd edition, 2015, pp 389-416.
ISBN: 978-3-527-33948-8

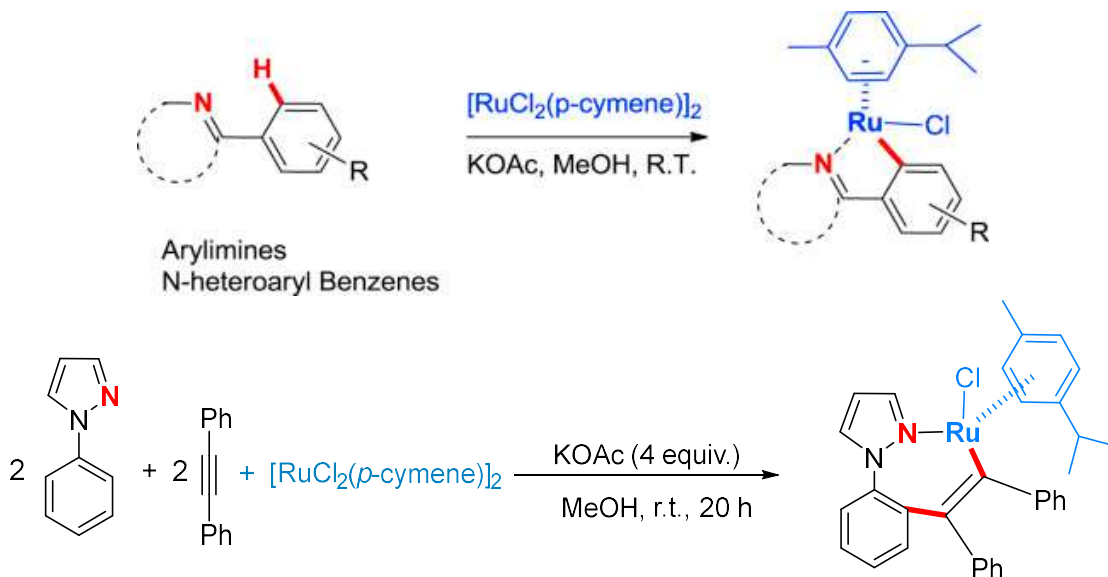


442. Cycloruthenation of aryl imines and N-heteroaryl benzenes via C-H bond activation with Ru(II) and acetate partners

Bin Li, Christophe Darcel, Thierry Roisnel, Pierre H. Dixneuf

J. Organometal. Chem., 2015, 793, 200–209; doi:10.1016/j.jorganchem.2015.02.050

Within the volume "Functionalization of CH Bonds with Applications in Catalysis », edited By Georgiy Borisovich Shul'pin and Richard D. Adams and dedicated to Alexander Shilov

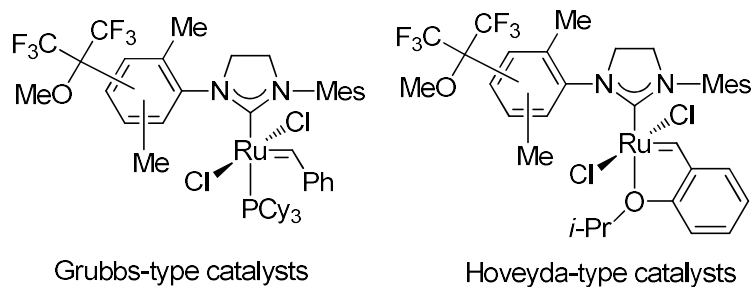
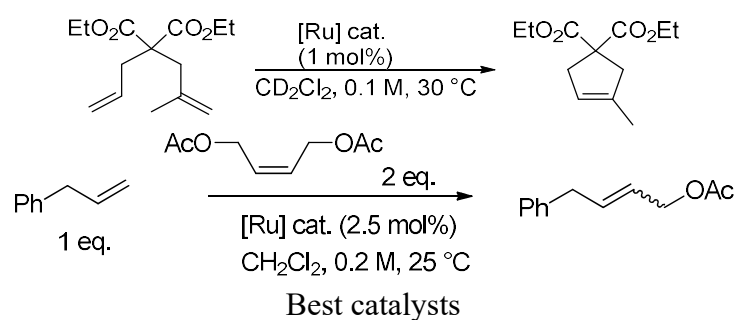


441. Metathesis catalysts with fluorinated unsymmetrical NHC ligands

Salekh M. Masoud, Artur K. Mailyan, Vincent Dorcet, Thierry Roisnel, Pierre H. Dixneuf, Christian Bruneau, Sergey N. Osipov.

Organometallics 2015, 34, 2305–2313. DOI: 10.1021/om501077w

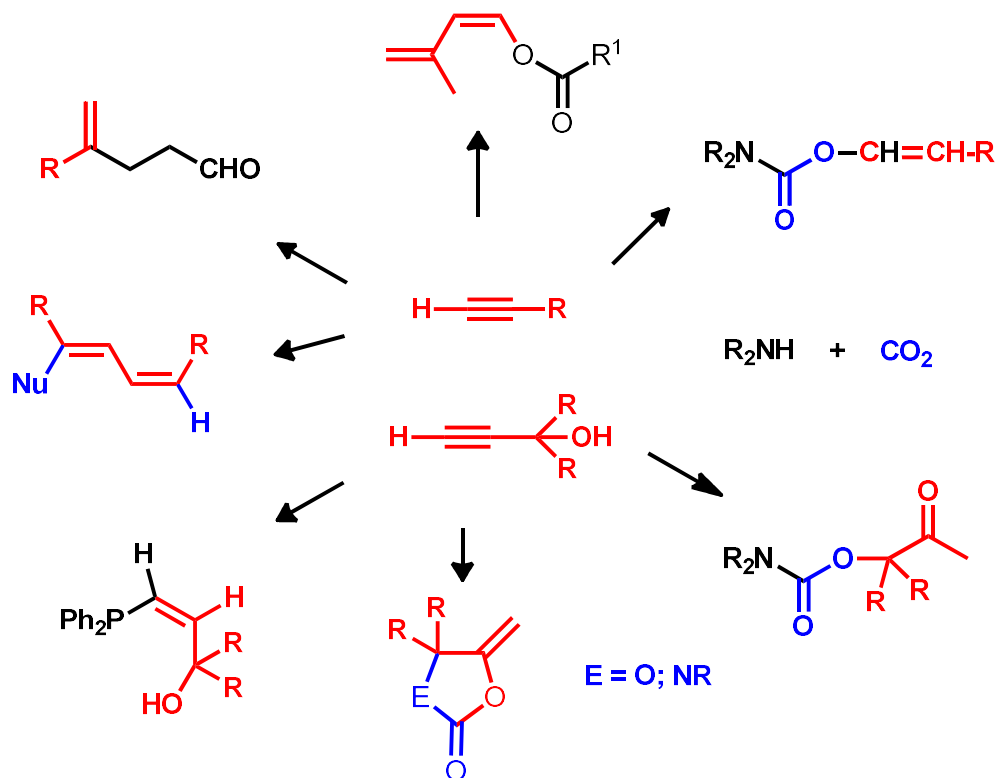
Mike Lappert memorial issue



440. Early steps of homogeneous catalysis in Rennes: carbon dioxide incorporation, alkyne activation and ruthenium catalysis.

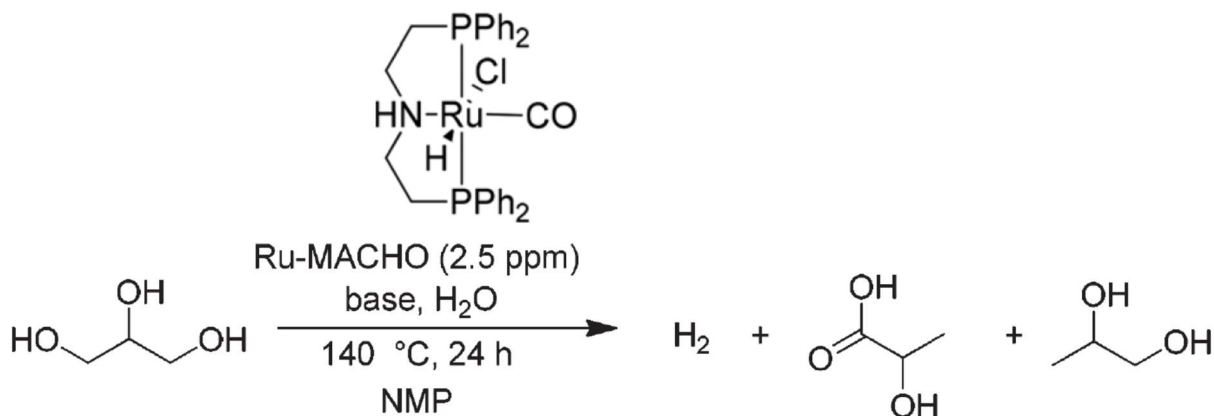
Pierre H. Dixneuf, *Catal. Lett.*, **2015**, 145, 360–372. DOI: 10.1007/s10562-014-1444-9

Dedicated to M. I. Bruce and B. M. Trost



439. Ruthenium-catalyzed Hydrogen Generation from Glycerol and Selective Synthesis of Lactic Acid

Yang Li, Martin Nielsen, Bin Li, Pierre H. Dixneuf, Henrik Junge, Matthias Beller
Green Chem., **2015**, 17, 193-198. DOI: 10.1039/C4GC01707B



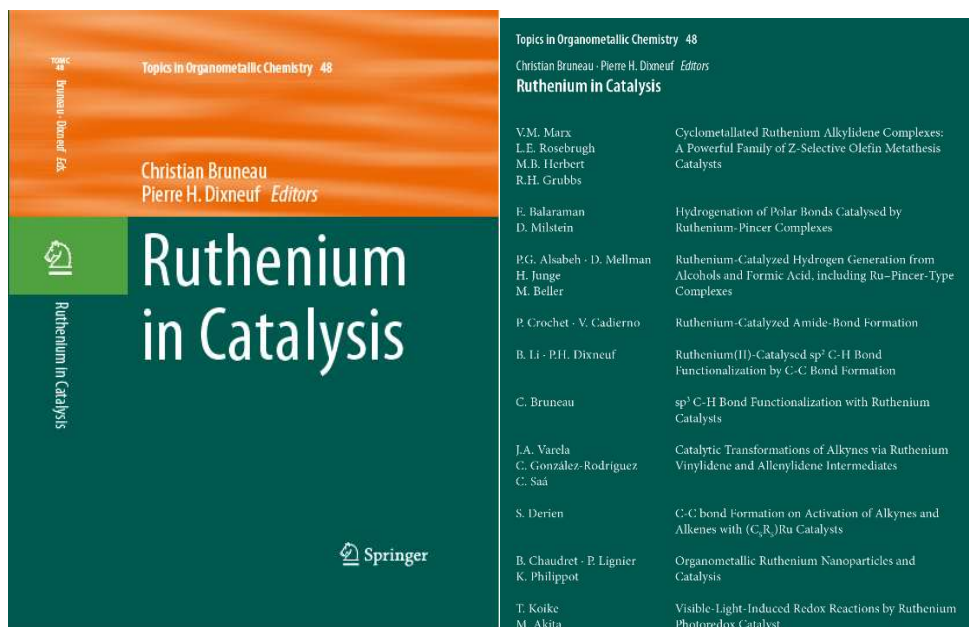
2014

438. Book

Ruthenium in Catalysis

Christian Bruneau and Pierre H. Dixneuf,

Topics in Organometallic Chemistry series, Springer, 2014,
DOI 10.1007/978-3-319-08482-4; ISBN 978-3-319-08482-4



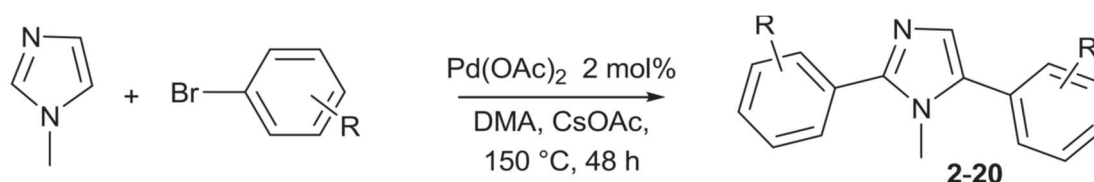
437. Book Chapter

Activation of sp^2 C-H bonds and C-C cross-coupling reactions with ruthenium(II) catalysts; B. Li; P. H. Dixneuf, in *Ruthenium in Catalysis* (Eds: Bruneau C.;Dixneuf, P. H.), Topics in Organometallic Chemistry series, Springer, **2014**, p 119-193.

436. One Pot $Pd(OAc)_2$ -Catalysed 2,5-Diarylation of Imidazoles Derivatives

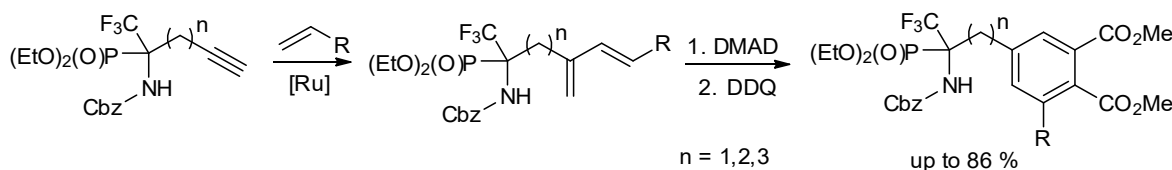
Abdelilah Takfaoui, Liqin Zhao, Rachid Touzani, Jean-Francois Soulé, Pierre H. Dixneuf, Henri Doucet, *Tetrahedron* **2014**, 70, 8316-8323.

<http://dx.doi.org/10.1016/j.tet.2014.09.012>



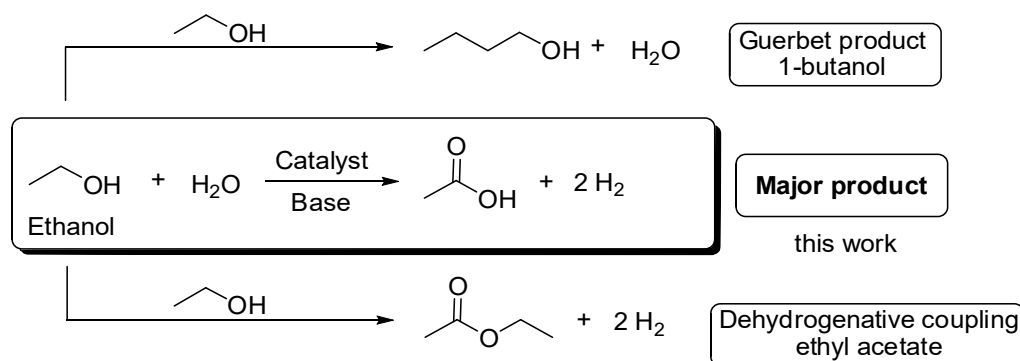
435. Access to functionalized α -CF₃- α -aminophosphonates *via* intermolecular ene-yne metathesis

Ivan M. Krylov, Artur K. Mailyan, Maria A. Zotova, Christian Bruneau, Pierre H. Dixneuf, Sergey N. Osipov. *Synlett*, **2014**, 25 2626-2628, DOI: 10.1055/s-0034-1379229



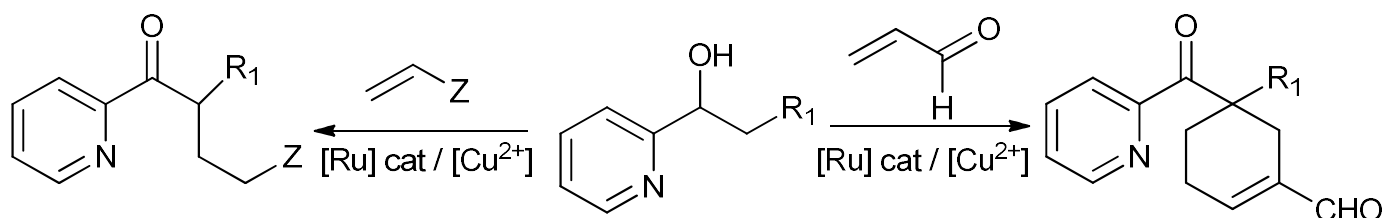
434. Efficient and Selective Hydrogen Generation from Bioethanol using Ruthenium Pincer-type Complexes

Peter Sponholz, Dörthe Mellmann, Christoph Cordes, Pamela G. Alsabeh, Bin Li, Yang Li, Martin Nielsen, Henrik Junge, Pierre Dixneuf, Matthias Beller *ChemSusChem*, **2014**, 7, 2419-2422, DOI: 10.1002/cssc.201402426.



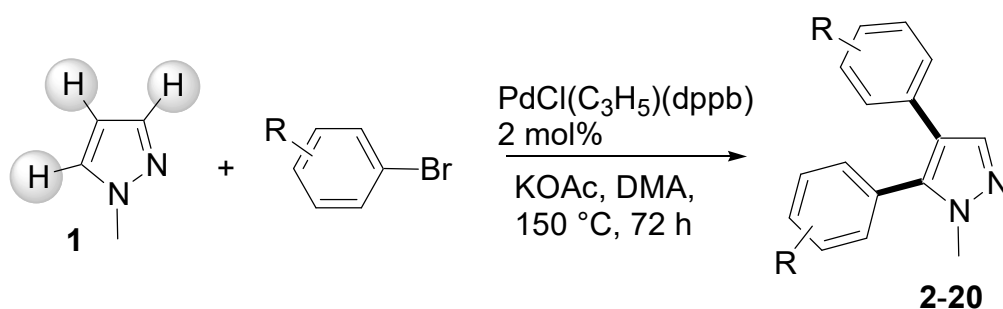
433. $\text{sp}^3\text{C-H}$ bond alkylation of ketones with alkenes via ruthenium(II) catalysed dehydrogenation of alcohols

Bin Li, Christophe Darcel, Pierre H. Dixneuf, *Chem. Commun.*, **2014**, 50, 5970-5972.
DOI:10.1039/C4CC00931B.



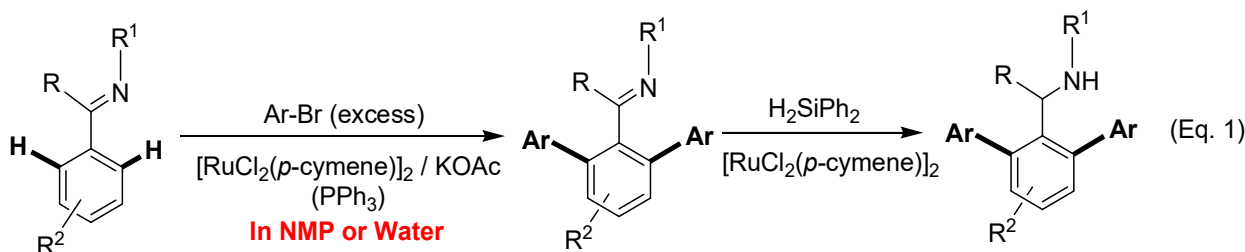
432. Palladium-catalysed direct diarylations of pyrazoles with aryl bromides: A one step access to 4,5-diarylpyrazoles

Takfaoui, A., Zhao, L., Touzani, R., Dixneuf, P.H., Doucet, H., *Tetrahedron Letters*, **2014**, 55(10), 1697 – 1701. DOI:10.1002/chin.201432143



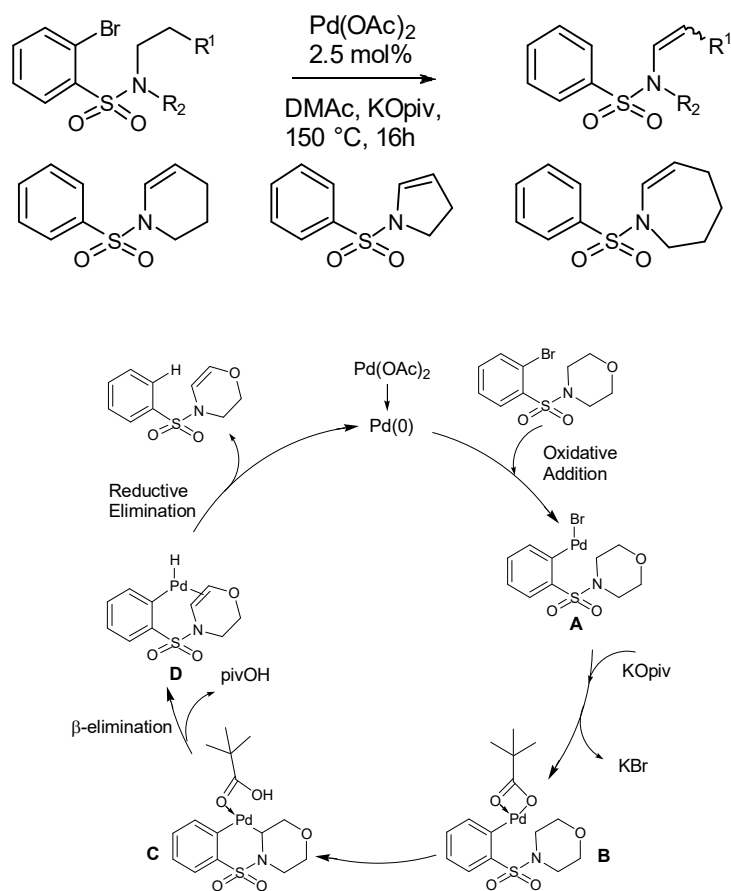
431. Sequential ruthenium(II)-acetate catalyzed C-H bond diarylation in NMP or water and hydrosilylation of imines.

Bin Li, Charles B. Bheeter Christophe, Darcel, Pierre H. Dixneuf, *Top Catal* **2014**, 57, 833–842. DOI 10.1007/s11244-014-0244-1



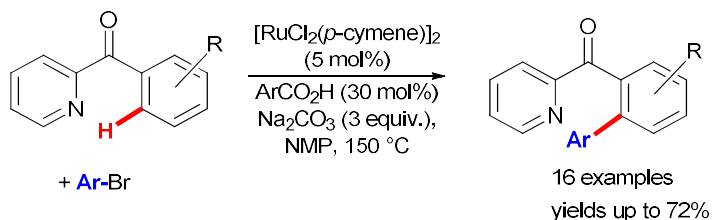
430. Palladium-catalyzed dehydrogenative sp³ C-H bonds functionalisation into alkenes: a direct access to N-alkenyl-benzenesulfonamides

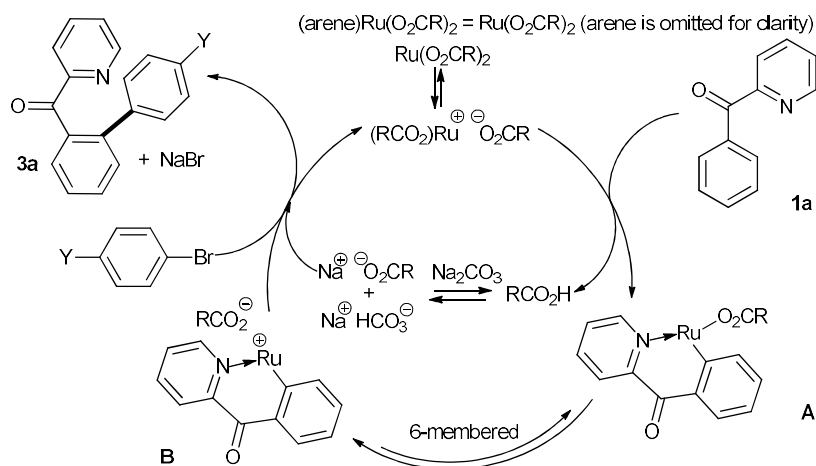
Charles B. Bheeter, Rongwei Jin, Jitendra K. Bera, Pierre H. Dixneuf, Henri Doucet
Adv. Synth. Catal. **2014**, 356, 119-124.



429. Ruthenium(II)-catalysed Functionalisation of C-H Bonds via a Six-membered Cyclometallate: Monoarylation of Aryl 2-pyridyl Ketones

Bin Li, Christophe Darcel, Pierre H. Dixneuf, *ChemCatChem* **2014**, 6, 127-130.
 DOI: 10.1002/cctc.201300752





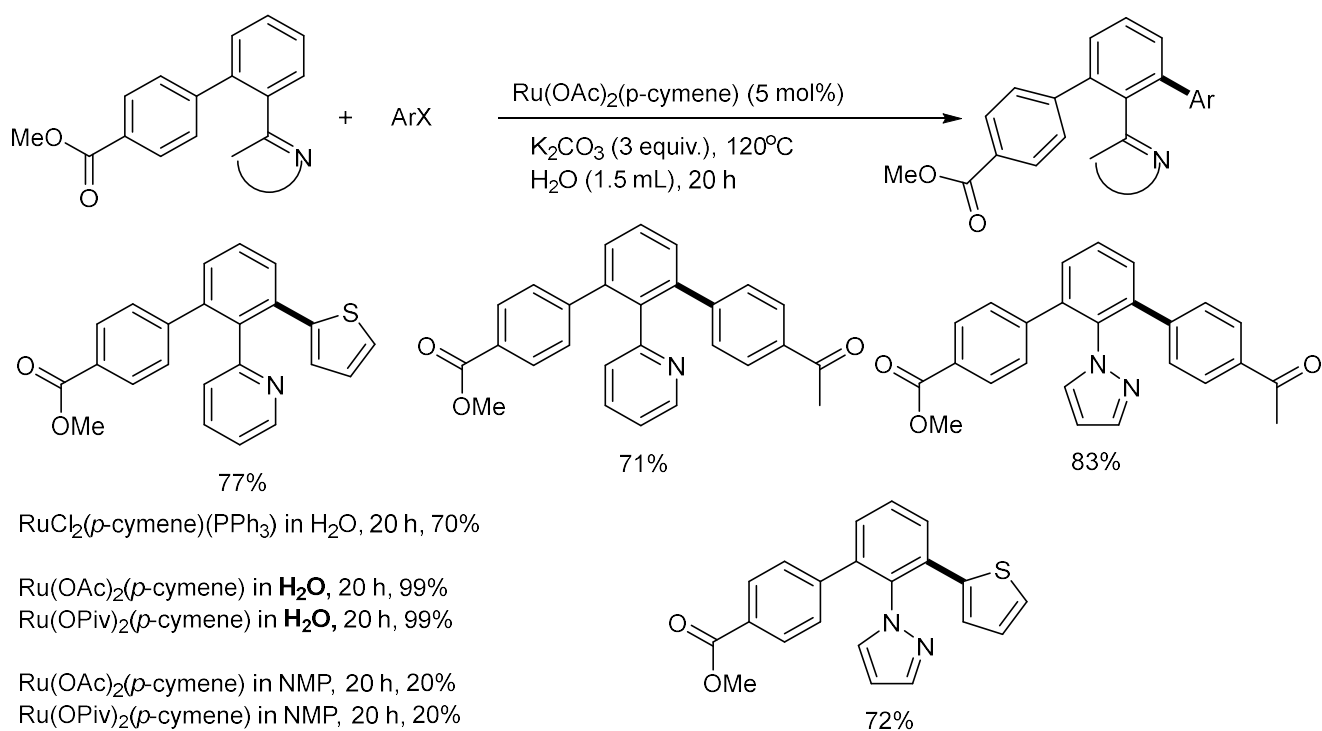
2013 (428- 418)

428. Review

sp²C-H Bond activation in water and catalytic cross-coupling reactions

B. Li , P. H. Dixneuf

Chem. Soc. Rev. **2013**, 42 (13), 5744 - 5767 DOI:10.1039/C3CS60020C.



427. Book chapter

Metal-catalyzed C-H bond activation and C-C bond formation in water

B. Li; P. H. Dixneuf, in metal-catalyzed reactions in water (Eds: Dixneuf, P. H.; Cadierno V.), Wiley, **2013**, chapter 2, PP 47-86, ISBN: 978-3-527-33188-8

426. Book

Metal Catalyzed reactions in water

Pierre H. Dixneuf, and Victorio Cadierno

Wiley, **2013**, 426 pages ISBN: 978-3-527-33188-8

Water is abundant in nature, non-toxic, non-flammable and renewable and could therefore be safer and economical for the chemical industry wherever it is used as a solvent. This book provides a comprehensive overview of developments in the use of water as a solvent for metal catalysis, illustrating the enormous potential of water in developing new catalytic transformations for fine chemicals and molecular materials synthesis.

A group of international experts cover the most important metal-catalyzed reactions in water and bring together cutting-edge results from recent literature with the first-hand knowledge gained by the chapter authors. This is a must-have book for scientists in academia and industry involved in the field of catalysis, greener organic synthetic methods, water soluble ligands and catalyst design, as well as for teachers and students interested in innovative and sustainable chemistry.



Pierre H. Dixneuf is Emeritus Professor of Chemistry at the University of Rennes, Bretagne, France, where he built a team working on organometallic chemistry and catalysis, and founded the Research Institute of Chemistry of Rennes. He developed several catalytic processes based on innovative ruthenium catalysts: selective transformations of alkyne and incorporation of CO₂, ruthenium-vinylidene and -allene complexes in catalysis, catalytic synthesis of heterocycles, alkene metathesis catalysts and transformation of plant oils, C-H bond activation/functionalization including in water. He has designed new ruthenium catalysts especially involving metal-carbene bonds. He was research advisor at both CNRS and University of Rennes. He has authored/co-authored more than 400 publications, and is a member of the Institut Universitaire de France (IUF). His work has been acknowledged with several prizes including: A. v. Humboldt, Le Bel, Colson-Wittig, Sacconi medals, prix IFP d'Académie des Sciences.



Victorio Cadierno received his PhD degree from the University of Oviedo (Spain) in 1996 under the supervision of Prof. J. Gimeno. He then joined the group of Dr. J. P. Majoral at the Laboratoire de Chimie de Coordination (LCC-CNRS) in Toulouse (France) for a two-year postdoctoral stay. Thereafter, he returned to the University of Oviedo where he is currently Associate Professor of Inorganic Chemistry. In 2002 he received the Young Investigator Award from the Spanish Royal Society of Chemistry (RSO). His research interests cover the chemistry of ruthenium complexes and their catalytic applications, with special focus on atom economical processes both in organic solvents and aqueous media. He has published more than 130 articles, reviews and book chapters in these fields.



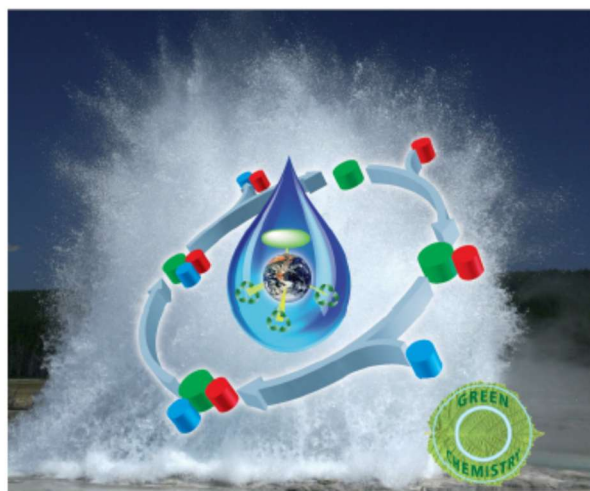
www.wiley-vch.de

Dixneuf · Cadierno (Eds.)

Edited by Pierre Dixneuf
and Victorio Cadierno

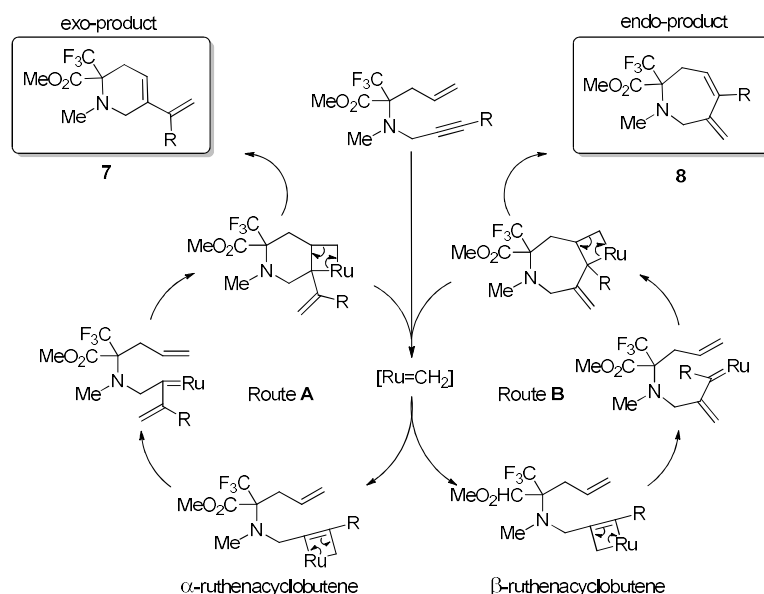
WILEY-VCH

Metal-Catalyzed Reactions in Water



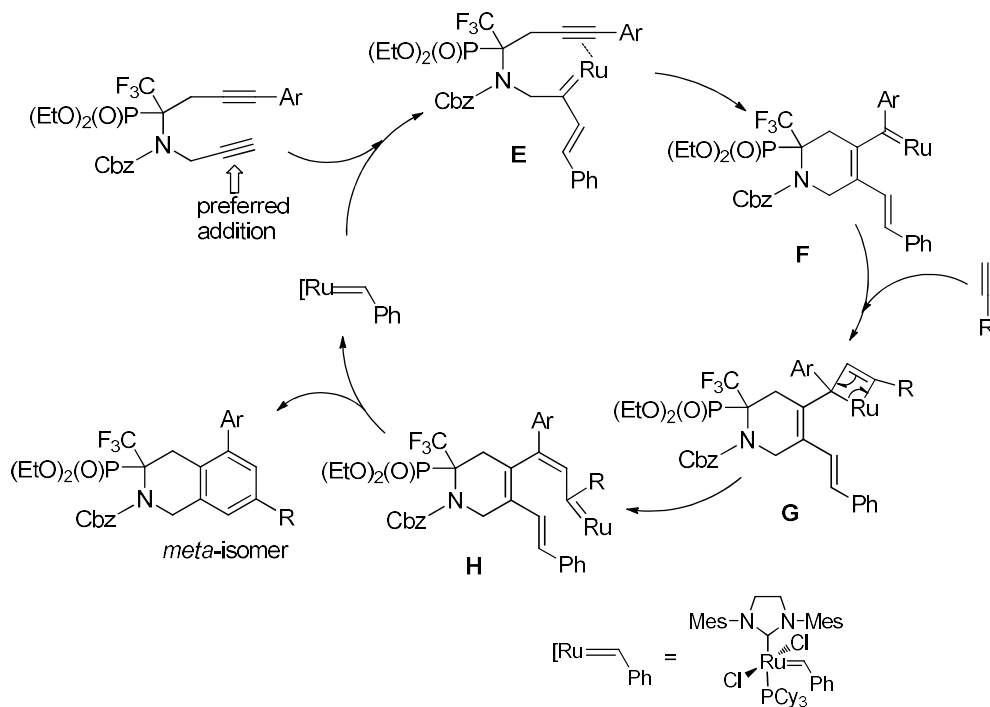
425. Access to Cyclic α -CF₃-substituted α -Amino Acid Derivatives via Ring Closing Metathesis of Functionalized 1,7-Enynes

Artur K. Mailyan, Ivan M. Krylov, Christian Bruneau, Pierre H. Dixneuf and Sergey N. Osipov
Eur. J. Org. Chem. **2013**, 5353–5363. DOI: 10.1002/ejoc.201300619



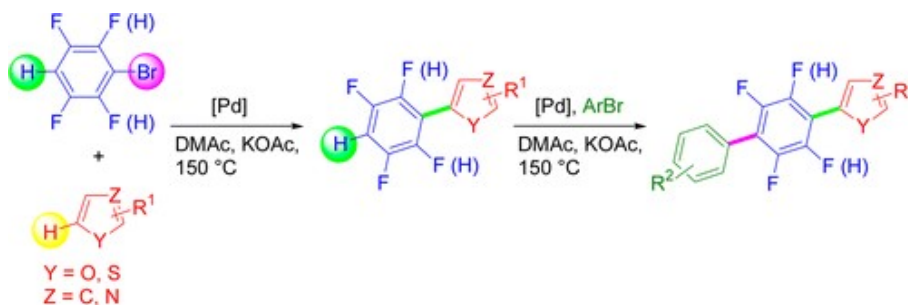
424. Synthesis of CF₃ Containing 1,2,3,4-Tetrahydroisoquinoline-3-Phosphonates via Regioselective Ru-Catalyzed Co-cyclotrimerization of 1,7-Azadiynes

Maria A. Zotova, Daria V. Vorobyeva, Pierre H. Dixneuf, Christian Bruneau, Sergey N. Osipov
Synlett, **2013**, 24, 1517-1522..



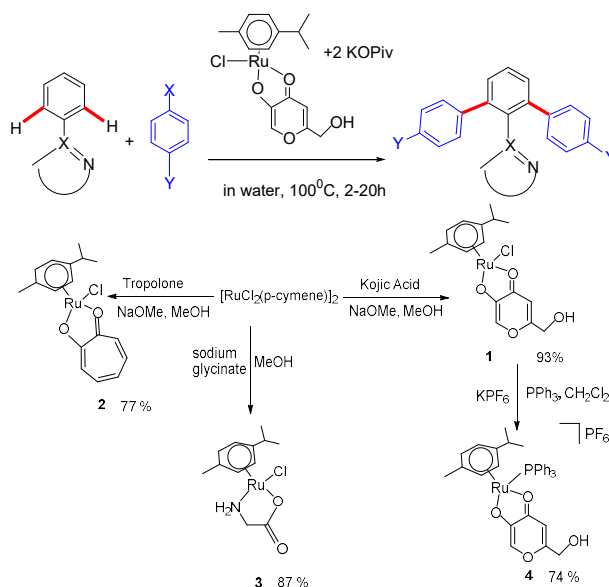
423. Synthesis of Heteroarylated Polyfluorobiphenyls via Palladium-catalyzed Sequential sp^2 C-H Bonds Functionalizations

T. Yan, L. Chen, C. Bruneau, P. H. Dixneuf, H. Doucet,
J. Org. Chem. **2013**, 78, 4177-4183. DOI: 10.1021/jo400221x



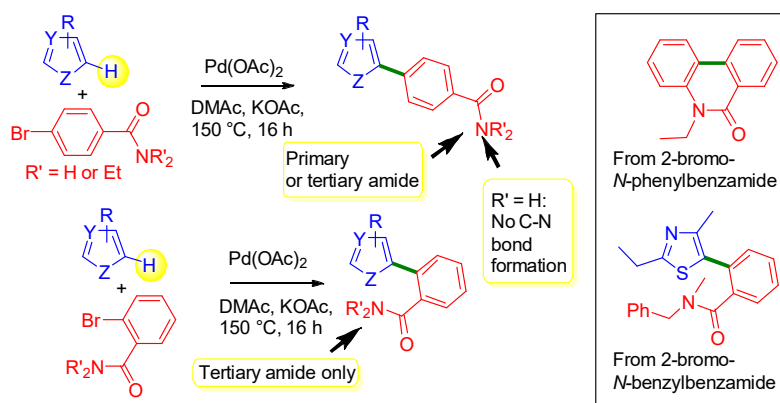
422. Direct C-H bond Arylation in Water Promoted by (O,O) and (O,N)-Chelate-Ruthenium(II) Catalysts

Keisham S. Singh, Pierre H. Dixneuf
ChemCatChem, **2013**, 5, 1313-1316. DOI: 10.1002/cctc.201300031



421. Palladium-catalysed regioselective direct arylations of heteroarenes by bromobenzamides: direct synthesis of heteroaryl-benzamides.

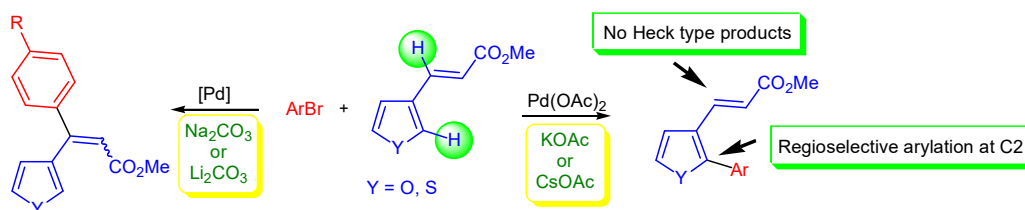
Lu Chen, Christian Bruneau, Pierre H. Dixneuf, Henri Doucet
ChemCatChem, **2013**, 5, 1956 – 1963. DOI: 10.1002/cctc.201200867



420. Palladium-Acetate Catalyst for Regioselective Direct Arylation at C2 of 3-Furanyl or 3-Thiophenyl Acrylates with Inhibition of Heck Type Reaction

Lu Chen, Christian Bruneau, Pierre H. Dixneuf, Henri Doucet

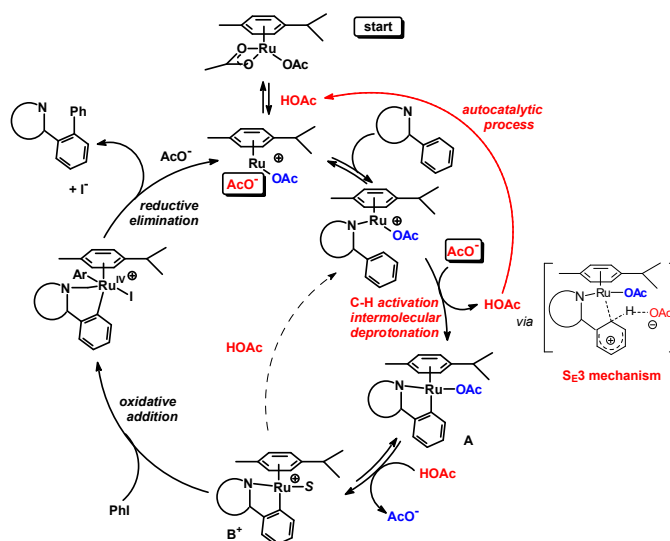
Tetrahedron **2013**, 69, 4381–4388. DOI:10.1016/j.tet.2012.12.061



419. Autocatalytic Intermolecular *versus* Intramolecular Deprotonation in C-H Bond Activation of Functional Arenes by Ruthenium(II) or Palladium(II) Complexes

Indira Fabre, Niklas von Wolff, Gaëtan Le Duc, Emmanuel Ferrer Flegeau, Christian Bruneau, Pierre H. Dixneuf, Anny Jutand

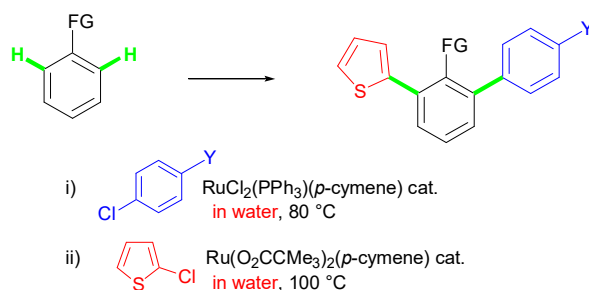
Chem. Eur. J., **2013**, 19, 7595–7604. DOI: 10.1002/chem.201203813



418. Ruthenium(II)-catalyzed selective monoarylation in water and sequential functionalisations of C–H bonds

Percia B. Arockiam, Cédric Fischmeister, Christian Bruneau, Pierre H. Dixneuf

Green Chem **2013**, 15, 67–71. DOI: 10.1039/c2gc36222h



P. H. Dixneuf publications 2012-2011 : Titles

2012 (404-417)

- 417.** Lewis Acid-Catalyzed Oxidation of Benzylamines to Benzamides
Xiao-Feng Wu, Charles Beromeo Bheeter, Helfried Neumann, Pierre H. Dixneuf, and Matthias Beller
Chem. Commun. . **2012**, 48, 12237–12239 . DOI: 10.1039/c2cc37149a
- 416.** Ruthenium-benzylidenes and -indenylidenes as efficient catalysts for the hydrogenation of aliphatic nitriles into primary amines
Xiaowei Miao, Johan Bidange, Pierre H. Dixneuf, Cédric Fischmeister, Christian Bruneau, Jean-Luc Dubois and Jean-Luc Couturier.
ChemCatChem **2012**, 4, 1911 – 1916. DOI: 10.1002/cctc.201200511
- 415.** Ruthenium(II)-catalyzed alkenylation of ferrocenyl ketones via C-H bond activation
Keisham S. Singh and Pierre H. Dixneuf,
Organometallics, **2012**, 31, 7320–7323. dx.doi.org/10.1021/om3008162
- 414.** Palladium-catalyzed direct arylation of 5-chloropyrazoles: Aselective access to 4-aryl pyrazoles
Tao Yan, Lu Chen, Christian Bruneau, Pierre H. Dixneuf, Henri Doucet
J. Org. Chem. **2012**, 77, 7659-7664. dx.doi.org/10.1021/jo301047v
- 413.** Cyclobutene Ring-opening of bicyclo[4.2.0]octa-1,6-dienes: access to CF₃-substituted 5,6,7,8-tetrahydro-1,7-naphthyridines
Artur K. Mailyan, Alexander S. Peregudov, Pierre H. Dixneuf, Christian Bruneau, and Sergey N. Osipov,
J. Org. Chem., **2012**, 77, 8518-8526. dx.doi.org/10.1021/jo301501r
- 412.** Ruthenium(II) Catalyzed C-H Bond Activation and Functionalization
Percia Beatrice Arockiam, Christian Bruneau, Pierre H. Dixneuf
Chem. Rev. **2012**, 112 (11), 5879–5918. DOI : 10.1021/cr300153j
- 411.** One-Step Synthesis of Strained Bicyclic Carboxylic and Boronic Amino Esters via Ruthenium-Catalysed Tandem Carbene Addition/ Cyclopropanation of Enynes
C. Vovard-Le Bray, H. Klein, P. H. Dixneuf, A. Macé, F. Berrée, B. Carboni, S. Dérien
Adv. Synth. Catal. **2012**, 354, 1919-1925. DOI: 10.1002/adsc.201200117
- 410.** Ruthenium(II) Catalysed Synthesis of Unsaturated Oxazolines via Arene C-H Bond Alkenylation
Bin Li, Karthik Devaraj, Christophe Darcel and Pierre H. Dixneuf
Green Chem., **2012**, 14,(10), 2706 – 2709, DOI: 10.1039/c2gc36111f
- 409.** Cyclometallation of arylimines and nitrogen-containing heterocycles via room-temperature C-H bond activation with arene ruthenium(II) acetato complexes
Bin Li, Thierry Roisnel, Christophe Darcel, and Pierre H. Dixneuf
Dalton Trans. **2012**, 41, 10934–10937. DOI: 10.1039/c2dt31401k
- 408.** Tandem catalytic acrylonitrile cross-metathesis and hydrogenation of nitriles with ruthenium catalysts: direct access to linear alpha, omega-aminoesters from renewables
X. Miao, C. Fischmeister, C. Bruneau, P. H. Dixneuf, J.-L. Dubois and J.-L. Couturier
ChemSusChem, **2012**, , 5, 1410 – 1414. DOI : 10.1002/cssc.201200086
- 407.** Polyamide precursors from renewable 10-undecenitrile and methyl acrylate via olefin cross-metathesis
X. Miao, C. Fischmeister, P. H. Dixneuf, C. Bruneau, J.-L. Dubois and J.-L. Couturier
Green Chem., **2012**, 14, 2179–2183. DOI: 10.1039/c2gc35648a

- 406.** Ester as a blocking group for palladium-catalysed direct forced arylation at the unfavourable site of heteroaromatics: simple access to the less accessible regioisomers
Lu Chen, Christian Bruneau, Pierre H. Dixneuf and Henri Doucet
Green Chem., **2012**, *14*, 1111-1124
- 405.** Catalytic C-H bond arylation of aryl imines and oxazolines in water with ruthenium(II)-acetate catalyst
Bin Li, Karthik Devaraj, Christophe Darcel, Pierre H. Dixneuf
Tetrahedron **2012**, *68*, 5179-5184
- 404.** Amine Synthesis via Mild Catalytic PHMS Hydrosilylation of Imines with [RuCl₂(p-cymene)]₂ catalyst.
Bin Li, Jean-Baptiste Sortais, Christophe Darcel, Pierre H. Dixneuf,
ChemSusChem, **2012**, *5*, 396 – 399

2011 (387-403)

- 403.** Phosphine free palladium catalytic system for inhibition of Heck type reaction and selective direct arylation of furans or thiophenes bearing alkenes
Lu Chen, Julien Roger, Christian Bruneau, Pierre H. Dixneuf, Henri Doucet,
Adv. Synth. Catal. **2011**, *353*, 2749 – 2760. DOI: 10.1002/adsc.20110019
- 402.** Syntheses of some new benzoxazole derivatives
C. Youssef, H. Ben Ammar, M. Belhouchet, K. Beydoun, R. Ben Salem, H. Doucet, P.H. Dixneuf
J. Heterocyclic Chem. **2011**, *48*, 1126-1131. DOI 10.1002/jhet.623
- 401.** Synthesis of a Square-Planar Rhodium Alkylidene *N*-Heterocyclic Carbene Complex and its Reactivity Towards Alkenes
Laura Palacios, Xiaowei Miao, Andrea Di Giuseppe, Simon Pascal, Carmen Cunchillos, Ricardo Castarlenas, Jesús J. Pérez-Torrente, Fernando J. Lahoz, Pierre H. Dixneuf, and Luis A. Oro.
Organometallics, **2011**, *30*, 5208–5213. dx.doi.org/10.1021/om2005782
- 400.** Ruthenium Diacetate-catalysed Oxidative Alkenylation of C-H Bonds in Air: Synthesis of Alkenyl *N*-Arylpyrazoles.
Percia B. Arockiam, Cedric Fischmeister, Christian Bruneau, Pierre H. Dixneuf
Green Chem **2011**, *13*, 3075-3078. DOI: 10.1039/c1gc15875a. (Hot article)
- 399.** Ruthenium–alkylidene catalysed cross-metathesis of fatty acid derivatives with acrylonitrile and methyl acrylate: a key step toward long-chain bifunctional and amino acid compounds†
X. Miao, R. Malacea, C. Fischmeister, C. Bruneau and P. H. Dixneuf
Green Chem. **2011**, *13*, 2911–2919 DOI: 10.1039/c1gc15569e
- 398.** Thermal [2+2]-Cycloaddition of CF₃-Substituted Allenynes : Access to Novel Cyclobutene-Containing alpha-Amino Acids.
Artur K. Mailyan, Ivan M. Krylov, Christian Bruneau, Pierre H. Dixneuf, Sergey N. Osipov
Synlett, **2011**, *16*, 2321-2324. DOI: 10.1055/s-0030-1261217.
- 397.** C-H bond functionalisation with [RuH(codyl)₂]BF₄ catalyst precursor
Wenbo Li, Percia B. Arockiam, Cedric Fischmeister, Christian Bruneau, Pierre H. Dixneuf
Green Chem., **2011**, *13*, 2315–2319. DOI:10.1039/C1GC15642J.
- 396. Review**
A green route to nitrogen-containing groups: the acrylonitrile cross-metathesis and applications to plant oil derivatives
Xiaowei Miao, Pierre H. Dixneuf, Cédric Fischmeister, Christian Bruneau
Green Chem., **2011**, *13*, 2258–2271 DOI: 10.1039/c1gc15377c

- 395.** Sequential Catalysis for the Production of Sterically Hindered Amines: Ru(II)-Catalyzed C-H Bond Activation and Hydrosilylation of Imines
Bin Li, Charles B. Bheeter, Christophe Darcel, Pierre H. Dixneuf
ACS Catal. **2011**, *1*, 1221–1224. dx.doi.org/10.1021/cs200331m
- 394.** A bridge from CO₂ to methanol : News and Views,
Pierre H. Dixneuf, *Nature Chem.* **2011**, *3*, 578-579.
- 393.** Ruthenium-Catalysed Synthesis of Fluorinated Bicyclic Amino Esters through Tandem Carbene Addition/Cyclopropanation of Enynes.
Matthieu Eckert, Solenne Moulin, Florian Monnier, Igor D. Titanyuk, Sergey N. Osipov, Thierry Roisnel, Sylvie Dérien and Pierre H. Dixneuf
Chem. Eur. J. **2011**, *17*, 9456 – 9462. DOI: 10.1002/chem.201101209
- 392.** A General Cyclocarbonylation of Aryl Bromides and Triflates with Acetylenes: Palladium-Catalyzed Synthesis of 3-Alkylidenefuran-2-ones
Xiao-Feng Wu, Basker Sundararaju, Pazhamalai Anbarasan, Helfried Neumann, Pierre H. Dixneuf, Matthias Beller.
Chem. Eur. J. **2011**, *17*, 8014 – 8017. DOI: 10.1002/chem.201101083
- 391.** Autocatalysis for C-H Bond Activation by Ruthenium(II) Complexes in Catalytic Arylation of Functional Arenes
Emmanuel Ferrer Flegeau, Christian Bruneau, Pierre H. Dixneuf, and Anny Jutand,
J. Am. Chem. Soc. **2011**, *133*, 10161- 10170. dx.doi.org/10.1021/ja201462n
- 390.** Preparation of Hexacoordinating Benzimidazole Containing Ligand and Hexakis(benzimidazole-ruthenium(II)) Complex. Molecular Structure of C₆{CH₂-(N-Benzimidazole-RuCl₂(*p*-cymene))}₆
Franc Požgan, Loïc Toupet, Pierre H. Dixneuf
Dalton Trans., **2011**, *40* (25), 6619-6622. DOI: 10.1039/c1dt10316d
- 389.** Synthesis of functionalized CF₃-containing heterocycles via [2,3]-sigmatropic rearrangement and sequential catalytic carbocyclization
Daria V. Vorobyeva , Artur K. Mailyan , Alexander S. Peregudov , Natalia M. Karimova, Tamara P. Vasilyeva , Ivan S. Bushmarinov, Christian Bruneau, Pierre H. Dixneuf, Sergey N. Osipov
Tetrahedron **2011**, *67*, 3524-3532
- 388.** A General Palladium-Catalyzed Carbonylative Sonogashira Coupling of Aryl Triflates
Xiao-Feng Wu, Basker Sundararaju, Helfried Neumann, Pierre H. Dixneuf, and Matthias Beller
Chem. Eur. J. **2011**, *17*, 106 – 110
- 387.** Palladium-catalysed direct arylation of thiophenes tolerant to silyl groups.
Lu Chen, Julien Roger, Christian Bruneau, Pierre H. Dixneuf and Henri Doucet
Chem Commun., **2011**, *47*, 1872–1874. DOI: 10.1039/c0cc04302h