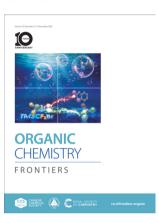
ORGANIC CHEMISTRY

FRONTIERS

rsc.li/frontiers-organic

IN THIS ISSUE

ISSN 2052-4129 CODEN OCFRA8 10(21) 5333-5540 (2023)



Cover

See Jinbo Hu et al., pp. 5343-5351.

Image reproduced by permission of An Liu and Jinbo Hu from Org. Chem. Front., 2023, 10, 5343.



Inside cover

See Changlong Xu, Xiaohua Cao, Huanan Huang et al., pp. 5352-5361.

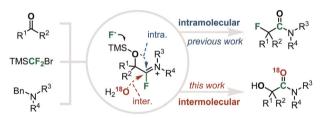
Image reproduced by permission of Huanan Huang from Org. Chem. Front., 2023, 10, 5352.

RESEARCH ARTICLES

5343

From intramolecular cyclization to intermolecular hydrolysis: TMSCF₂Br-enabled carbonylation of aldehydes/ketones and amines to α-hydroxyamides

An Liu, Shuo Sun, Qiqiang Xie, Rumin Huang, Taige Kong, Chuanfa Ni and Jinbo Hu*



from intramolecular cyclization to intermolecular hydrolysis

5352

NBN embedded phenalenes as a new class of zigzag type polycyclic aromatic hydrocarbons for explosive detection

Han Xu, Junxiong Yao, Wenjue Tu, Xiaomin Zheng, Huimin Fu, Qixing Xu, Shengting Zhang, Jiaqi Li, Hanbin Wang, Jie Fang, Jing Yang, Changlong Xu,* Xiaohua Cao* and Huanan Huang*



EDITORIAL STAFF

Executive Editor

Wenjun Liu

Deputy Editor

Kailin Deng

Development Editor

Cheng Du

Editorial Production Manager

Helen Saxton

Senior Publishing Editor

Becky Webb

Kirstine Anderson, Matthew Bown, Laura Cooper, Hannah Fielding, Clare Fitzgerald, Anoushka Handa, Claire Harding, Alan Holder, Charlie Palmer, Rosie Rothwell, Donna Smith, Laura Smith

Assistant Editors Jie Gao, Yu Zhang

Publisher

Jeanne Andres

For queries about submitted papers, please contact Helen Saxton, Editorial Production Manager, in the first instance. E-mail: OrgChemFrontiersPROD@rsc.org

For pre-submission queries please contact Wenjun Liu,

Executive Editor. Email: OrgChemFrontiersED@rsc.org

Organic Chemistry Frontiers (electronic: ISSN 2052-4129) is published 24 times a year by the Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, UK CB4 0WF.

All orders, with cheques made payable to the Royal Society of Chemistry, should be sent to RSC Order Department, Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, CB4 0WF, UK Tel +44 (0)1223 432398; E-mail orders@rsc.org

2023 Annual (electronic) subscription price: £2,182; US\$3,492. Customers in Canada will be subject to a surcharge to cover GST. Customers in the EU subscribing to the electronic version only will be charged VAT.

If you take an institutional subscription to any Royal Society of Chemistry journal you are entitled to free, site-wide web access to that journal. You can arrange access via Internet Protocol (IP) address at www.rsc.org/ip

Customers should make payments by cheque in sterling payable on a UK clearing bank or in US dollars payable on a US clearing bank.

Whilst this material has been produced with all due care, the Royal Society of Chemistry cannot be held responsible or liable for its accuracy and completeness, nor for any consequences arising from any errors or the use of the information contained in this publication. The publication of advertisements does not constitute any endorsement by the Royal Society of Chemistry or Authors of any products advertised. The views and opinions advanced by contributors do not necessarily reflect those of the Royal Society of Chemistry which shall not be liable for any resulting loss or damage arising as a result of reliance upon this material. The Royal Society of Chemistry is a charity, registered in England and Wales, Number 207890, and a company incorporated in England by Royal Charter (Registered No. RC000524), registered office: Burlington House, Piccadilly, London W1J 0BA, UK, Telephone: +44 (0) 207 4378 6556.

Advertisement sales:

Tel +44 (0) 1223 432246; Fax +44 (0) 1223 426017; E-mail advertising@rsc.org

For marketing opportunities relating to this journal, contact marketing@rsc.org

ORGANIC CHEMISTRY

FRONTIFRS

An international, high impact journal for cutting-edge researches from all disciplines of organic chemistry.





rsc.li/frontiers-organic

Published in collaboration with the Chinese Chemical Society and Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences

Editorial Board

Editor-in-Chief

Shengming Ma, Shanghai Institute of Organic Chemistry, China

Associate Editors

Arjan W. Kleij, Institute of Chemical Research of Catalonia, Spain Chulbom Lee, Seoul National University,

Bill Morandi, ETH Zurich, Switzerland

Jennifer M. Schomaker, University of Wisconsin-Madison, USA

Frank Würthner, University of Würzburg, Germany

Pei-Qiang Huang, Xiamen University, China Qian Zhang, Northeast Normal University,

Guy Bertrand, University of California, San Diego, USA Nicolai Cramer, EPFL, Switzerland Louis Fensterbank, Sorbonne Université,

Lichang Wang, Southern Illinois University, USA

Dan Yang, Westlake University, China

Advisory Board

Ayyappanpillai Ajayaghosh, National Institute for Interdisciplinary Science and Technology, India

Lutz Ackermann, Georg-August-Universitat Gottingen, Germany

Marco Bandini, University of Bologna, Italy Matthias Beller, University of Rostock,

Akkattu T. Biju, Indian Institute of Science, India

Xi Chen, University of California-Davis, USA Yiyun Chen, Shanghai Institute of Organic Chemistry, China Yonggui Robin Chi, Nanyang Technological

University, Singapore Stuart Conway, University of Oxford, UK Shuanhu Gao, East China Normal University, China

Véronique Gouverneur, University of Oxford,

Frank Glorius, Westfälische Wilhelms Universität Münster, Germany Zhenhua Gu, University of Science and Technology of China, China Masayuki Inoue, The University of Tokyo, Japan

Guochen Jia, Hong Kong University of Science & Technology, China Michael Kerr, University of Western Ontario, Canada

Ohyun Kwon, University of California, Los Angeles, USA Rai-Shung Liu, National Tsing Hua

University, Hsinchu Sanzhong Luo, Tsinghua University, China Cristina Nevado, University of Zurich, Switzerland

Christoph Schalley, Freie Universität Berlin, Germany

Daniel Seidel, University of Florida, USA Feng Shi, Jiangsu Normal University, China Yian Shi, Colorado State University, USA Vinod K. Singh, IIT Kanpur, India Wenjun Tang, Shanghai Institute of Organic Chemistry, China

Yong Tang, Shanghai Institute of Organic Chemistry, China

Chen-Ho Tung, Technical Institute of Physics and Chemistry, CAS, China Tao Ye, Peking University (Shenzhen), China Tomoki Ogoshi, Kanazawa University, Japan Zhaohui Wang, Tsinghua University, China Lizhu Wu, Technical Institute of Physics and Chemistry, CAS, China

Xingang Zhang, Shanghai Institute of Organic Chemistry, China

Information for Authors

Full details on how to submit material for publication in Organic Chemistry Frontiers are given in the Instructions for Authors (available from http://www.rsc.org/authors). Submissions should be made via the journal's homepage: rsc.li/frontiers-organic

Authors may reproduce/republish portions of their published contribution without seeking permission from the ${\rm \bar{R}oyal}$ Society of Chemistry, provided that any such republication is accompanied by an acknowledgement in the form: (Original Citation)-Reproduced by permission of the Royal Society of Chemistry.

Apart from fair dealing for the purposes of research or private study for non-commercial purposes, or criticism or review, as permitted under the Copyright, Designs and Patents Act 1988 and the Copyright and Related Rights Regulation 2003, this publication may only be reproduced, stored or transmitted, in any form or by any means, with the prior permission in writing of the Publishers or in the case of reprographic reproduction in accordance with the terms of licences issued by the Copyright Licensing Agency in the UK. US

This journal is © the Partner Organisations 2023.

Registered charity number: 207890

copyright law is applicable to users in the USA.



5362

Difluorination of heterobenzylic C-H bonds with N-fluoro-N-(fluorosulfonyl)carbamate (NFC)

Akiya Adachi, Takuya Hashimoto,* Kohsuke Aikawa,* Kyoko Nozaki and Takashi Okazoe

5369

Electrocatalytic oxidative C-H cycloamination towards tricyclic [1,2,4]triazolo-[3,4-i]purine nucleosides mediated by bromide ions

Qi-Liang Yang,* Wan-Wan Li, Zhong-Xu Zhang, Han-Meng Zhang, Xian-Jia Li and Hai-Ming Guo*

5375

Direct C(sp²)-H fluoroalkylation of quinoxalin-2 (1H)-ones with (fluoroalkyl)triphenylphosphonium salts and alkenes

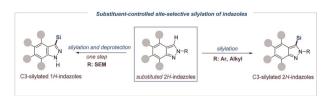
Wenwen Wang, Tonghao Zhu* and Jie Wu*

5383

Highly diastereo- and enantioselective synthesis of spiro β-lactams via copper-catalyzed Kinugasa/ aldol cascade reaction

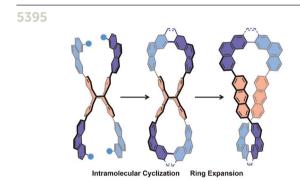
Jie Li, Haowen Ma, Xianqiang Zhong, Shanyue Li, Jiehao Zhang, Yunlin Ao, Wei Zhou* and Qian Cai*

5389



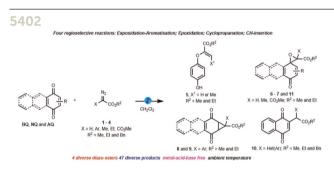
Substituent-controlled site-selective silylation of 2*H*-indazoles to access silylated 1*H*-indazoles and 2*H*-indazoles under transition metal-free conditions

Jia Jia, Shuai Chen, Ting Mao, Jinlan Li, Weipiao Li, An-Jun Wang, Dezhi Yang, Zhengli Liu,* Chun-Yang He* and Zhang Feng*



Conjugated figure-of-eight macrocycles derived from the anthracene photodimer: synthetic execution through intramolecular cyclization and topological manipulation through ring expansion

Lijie Zhan, Hongyan Xiao, Jia-Nan Gao and Huan Cong*



Theoretical studies to predict the utility of diazo esters in their reactions with 1,4-quinones: experimental validation *via* a visible light driven metal free process

Tejas Prabakar, Subhankar Bera, Shagun Singh, Anubhuti Srivastava, Manasi Chandrachood, Debajit Maiti, Naiwrit Karmodak* and Subhabrata Sen*

5416 R¹_NOH _O_N_R¹ -OAr ArOH .Br \dot{R}^2 NCchiral PTC NC chiral PTC CO2iPr \dot{R}^2 CO₂iPr CO₂iPr base 11 examples 18 examples high ee, high yield high ee, high yield **Fibrate** Bicalutamide

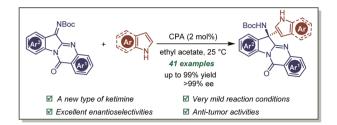
Bisguanidinium-catalyzed formation of oxygen-containing quaternary stereogenic carbon centers

Xu Ban,* Changxing Chen, Kha Tuan Khoa, Chao Wang, Zhiyong Jiang and Choon-Hong Tan*

5421

Enantioselective synthesis of tryptanthrin derivatives enabled by an asymmetric aza-Friedel-Crafts reaction

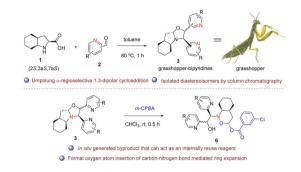
Yong You.* Guo-Ying Gan. Si-Yang Duan. Yan-Ping Zhang, Qun Li, Zhen-Hua Wang, Jian-Qiang Zhao, Xiong-Li Liu and Wei-Cheng Yuan*



5428

Umpolung α -regioselective 1,3-dipolar cycloaddition and internal recycle of byproduct as two key strategies: access to diverse chiral bipyridines

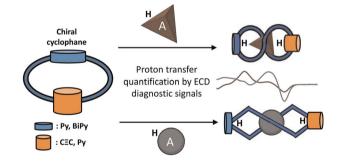
Yu-Heng Wang, Xi-Rui Wang, Ke-Lan Xu, Zi-Yue Chen, Bo-Wen Pan, Li-Jun Peng,* Ying Zhou and Xiong-Li Liu*



5435

Deciphering the degree of proton-transfer in pyrido-cyclophanes by chiroptical outcomes in non-aqueous solvents

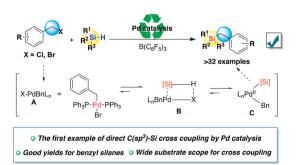
Jonathan Álvarez-García, Víctor Rubio-Pisabarro, Luis García-Río and María Magdalena Cid*



5443

Palladium-catalyzed C(sp³)-Si cross-coupling silylation of benzyl halides with hydrosilanes

Xiao-Hua Zhou, Jun-Hui Zhu, Guang-Ao Song, Xin-Li Jiang, Xiao-Jun Fang, Zheng Xu and Li-Wen Xu*



5451

- 39 Examples up to 87% yield
- High regio- and stereoselectivity
- Three new C-C bond and two ring formation

Palladium-catalyzed bicyclization of alkynyl aryl iodide with allenyl malonates

Ping-Xin Zhou,* Yang Liu, Xueyan Du, Ning Liu, Kexin Li, Yuji Wu, Wang Feng, Xu Liu and Yingying Kong*

5457

- ♠ Readily available starting materials
- ♠ Gram scale synthesis
- Significant synthetic application
- ♠ 37 examples, up to 93%

Chemoselective three-component synthesis of α -carbolines under metal-free conditions

Wei Feng, Chao Zhang, Xinlin Zhou, Kuiyi You,* Guo-Jun Deng* and Shanping Chen*

5463

Palladium-catalyzed regio- and stereoselective allylic alkylation of 5-vinyloxazolidine-2,4-diones with azlactones: synthesis of chiral (Z)-trisubstituted allylic amino acid derivatives

Kuan Li, Lan Wang, Shuo Zhen, Lihan Zhu, Songcheng Yu, Yongjun Wu and Hongchao Guo*

5470

Photocatalytic C(sp²)-H sulfamoylation of enamides: regio- and stereoselective construction of (E)-β-sulfamoyl enamides

Lingli Liu, Yechun Wu, Xian Wu, Jin-Tao Yu* and Changduo Pan*

5478

Nickel-catalyzed reductive coupling of nitroarenes and phosphine oxides to access phosphinic amides

Meixia Liu, Huimin Hu, Runbo Sun, Haoyuan Li, Anjun Ding, Xiaoyong Liu, Zhengjiang Fu, Shengmei Guo* and Hu Cai*

inexpensive-metal catalyst gram-scale reaction

and up to 90% yield

5484

Reductive thiolation and oxidative dehydroaromatization of cyclohexanones with primary amines and sodium sulfinates to access o-sulfanylanilines

Hui Wu, Lin Zhao, Wenting Wang, Yining Yu and Ge Wu*

5490

Stereoselective formal alkenylation of β,β-disubstituted enesulfinamides for constructing 1,5- and 1,4-dicarbonyl derivatives bearing less-accessible acyclic α -quaternary stereocenters

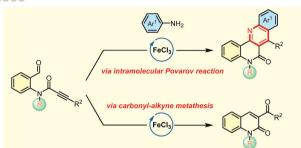
Chong-Lin Zhu and Chong-Dao Lu*

5496

Nitro - a traceless directing group for reversing the radical site-selectivity of styrene derivatives

Zhenxing Zhang, Xin Zhang, Yaxin Wang, Yang Liu, Yu Wang, Xinhao Zhang,* Junyan Ma* and Lijuan Song*

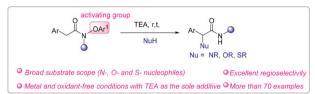
5505



Iron-catalyzed divergent approach to naphthyridinones and quinolinones: leveraging Povarov and carbonyl-alkyne metathesis reactions of electron deficient alkynes

Jia-ming Chen, Jun-hua Li, Li-cheng Xie, Hui-ke Fan, Xia-xin Sheng, Yu-jia Du, Guo-ying Liu, Hao Hu, Yan Jiang* and Ming Chen*

5512

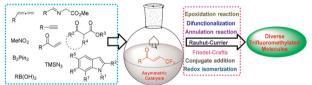


Regioselective heterofunctionalization of alpha-aryl amides with heteroatom nucleophiles via electrophilic activation

Shuai Han, Yu Guo,* Wei Zhang, Jinjin Chen, Zhen Wang* and Yao-Fu Zeng*

REVIEW

5519



β-Trifluoromethylated enones as trifluoromethylated synthons in asymmetric catalysis

Xiufang Cheng, Wenjin Niu, Huamin Wang* and Ying-Wu Lin*