

# Organic & Biomolecular Chemistry

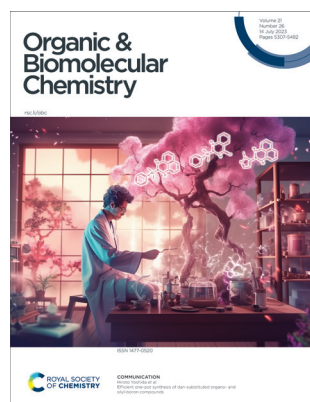
An international journal of synthetic, physical and biomolecular organic chemistry

[rsc.li/obc](https://rsc.li/obc)

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

## IN THIS ISSUE

ISSN 1477-0520 CODEN OBCRAK 21(26) 5307–5482 (2023)



### Cover

See Hiroto Yoshida *et al.*,  
pp. 5347–5350.

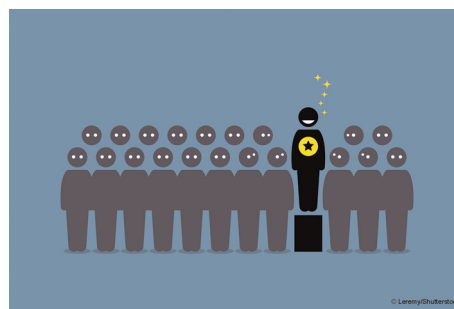
Cover artwork designed  
with Midjourney.

Image reproduced by  
permission of Kazuki Tomota  
from *Org. Biomol. Chem.*,  
2023, **21**, 5347.

## EDITORIAL

5316

### Outstanding Reviewers for *Organic & Biomolecular Chemistry* in 2022



## REVIEW

5317

### Synthesis, reactions and application of chalcones: a systematic review

Mona A. Shalaby, Sameh A. Rizk and Asmaa M. Fahim\*



## Editorial Staff

### Executive Editor

Rebecca Garton

### Deputy Editor

Jack Washington

### Development Editor

Daniel Robertshaw

### Editorial Production Manager

Sarah Whitehouse

### Publishing Editors

Nicola Burton, Tom Cozens, Katie Fernandez, Ryan Kean, Roxane Owen, Alex Rowles

### Editorial Assistant

Amy Cook

### Publishing Assistant

Andrea Whiteside

### Publisher

Sam Keltie

For queries about submitted papers, please contact Sarah Whitehouse, Editorial Production Manager in the first instance. E-mail: [obc@rsc.org](mailto:obc@rsc.org)

For pre-submission queries please contact Rebecca Garton, Executive Editor. Email: [obc-rsc@rsc.org](mailto:obc-rsc@rsc.org)

Organic & Biomolecular Chemistry (electronic: ISSN 1477-0539) is published 48 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 the Royal Society of Chemistry 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](mailto:orders@rsc.org)

2023 Annual (electronic) subscription price: £5164; US\$9267.

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 RSC 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](http://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](mailto:advertising@rsc.org)

For marketing opportunities relating to this journal, contact [marketing@rsc.org](mailto:marketing@rsc.org)

# Organic & Biomolecular Chemistry

Rapid publication of high quality organic chemistry research

[rsc.li/obc](http://rsc.li/obc)

*Organic & Biomolecular Chemistry* is a weekly journal for the publication of highly significant original research and reviews in all areas of organic chemistry, including organic synthesis, physical organic chemistry, and organic aspects of supramolecular chemistry and chemical biology.

## Editorial Board

### Chair

Anthony Davis, University of Bristol, UK

### Associate Editors

Christian Hackenberger, Leibniz-Institut für Molekulare Pharmakologie and Humboldt Universität zu Berlin, Germany

Katrina Jolliffe, University of Sydney, Australia

Motomu Kanai, University of Tokyo, Japan

Lei Liu, Tsinghua University, China

Xiaohua Liu, Sichuan University, China

Santanu Mukherjee, Indian Institute of

Science, Bangalore, India

Scott Silverman, University of Illinois at

Urbana-Champaign, USA

Cristina Trujillo, University of Manchester, UK

### Members

Ivan Huc, Ludwig-Maximilian University of Munich, Germany

S.S.V. Ramasastry, Indian Institute of Science

Education and Research Mohali, India

Corinna Schindler, University of Michigan,

USA

Judy I-Chia Wu, University of Houston, USA

## Advisory Board

Kyo Han Ahn, Pohang University of Science and Technology, Korea

Igor Alabugin, Florida State University, USA

Gonçalo Bernardes, University of Cambridge, UK

Shunsuke Chiba, Nanyang Technological University, Singapore

Andre Cobb, Kings College London, UK

Steven Cobb, Durham University, UK

Ratmir Derda, University of Alberta, Canada

Antonio Echavarren, Institute of Chemical

Research of Catalonia, Spain

Ben Feringa, University of Groningen, The

Netherlands

Amar Flood, Indiana University Bloomington,

USA

Carmen Galan, University of Bristol, UK

Jason Harper, University of New South Wales, Australia

Elizabeth Krenske, University of Queensland, Australia

Maresh Lakshman, The City College of New York, USA

Shih-Yuan Liu, Boston College, USA

Geraldine Masson, Institut de Chimie des

Substances Naturelles (CNRS), France

Elizabeth New, University of Sydney, Australia

Dhevalapally B. Ramachary, University of

Hyderabad, India

Paolo Scrimin, University of Padova, Italy

Oliver Seitz, Humboldt University of Berlin,

Germany

Jay Siegel, University of Zürich, Switzerland

Corey Stephenson, University of Michigan, USA

Dean Tantillo, University of California Davis, USA

Mark Taylor, University of Toronto, Canada

Georgios Vassilikogiannakis, University of

Crete, Greece

Helma Wennemers, ETH Zürich, Switzerland

Peter Wipf, University of Pittsburgh, USA

Shuli You, Shanghai Institute of Organic

Chemistry, China

Jian Zhou, East China Normal University,

China

## Information for Authors

Full details on how to submit material for publication in Organic & Biomolecular Chemistry 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/obc](http://rsc.li/obc)

Authors may reproduce/republish portions of their published contribution without seeking permission from the Royal 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.

This journal is © The Royal Society of Chemistry 2023.

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 copyright law is applicable to users in the USA.

Registered charity number: 207890

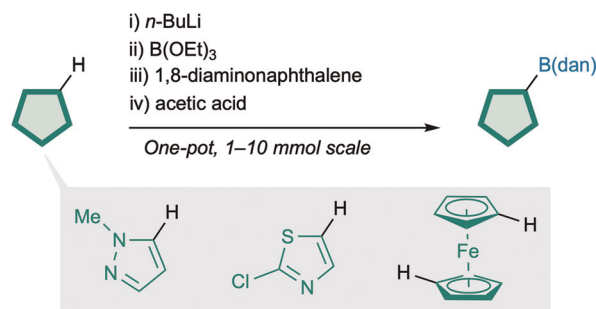


## COMMUNICATIONS

5347

**Efficient one-pot synthesis of dan-substituted organo- and silyl-boron compounds**

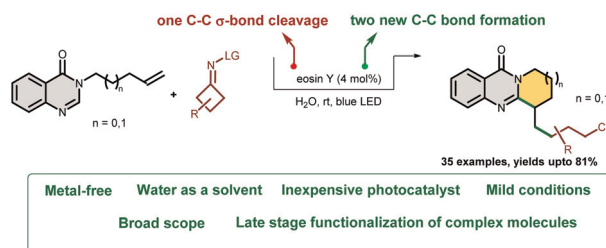
Kazuki Tomota, Yuki Izumi, Kazuki Nakanishi, Masaaki Nakamoto and Hiroto Yoshida\*



5351

**Dicarbofunctionalization of unactivated alkenes via organo-photoredox catalysis in water: access to cyanoalkylated fused quinazolinones**

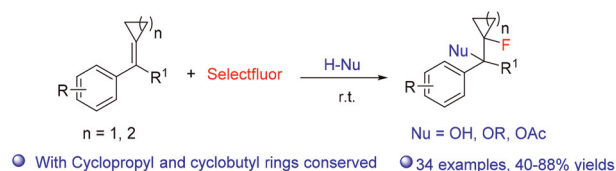
Abuthayir Mohamathu Ghouse and Srirama Murthy Akondi\*



5356

**Fluorination of alkylidenecyclopropanes and alkylidenecyclobutanes: divergent synthesis of fluorinated cyclopropanes and cyclobutanes**

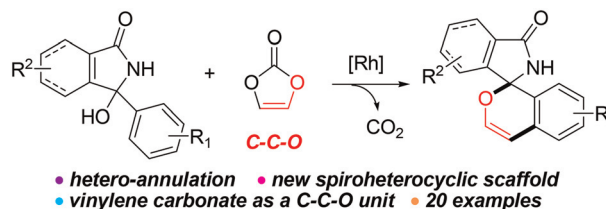
Jin-Bo Wu, Shuang Li, Shuai Han, Yue Wang, Wei Zhang, Zhen Wang\* and Yao-Fu Zeng\*



5361

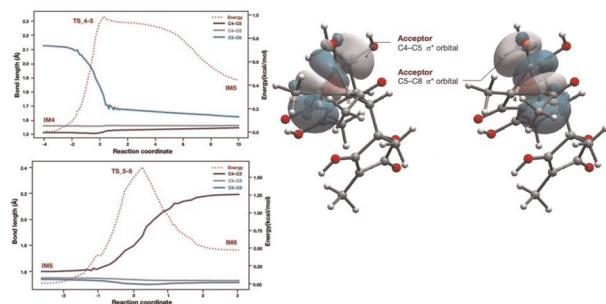
**Rh(III)-catalyzed [3 + 3] spirocyclization of 3-aryl-3-hydroxyisoindolinones with vinylene carbonate as a three-atom unit**

Hai-Shan Jin\* and Cai-Cai Liang



## COMMUNICATIONS

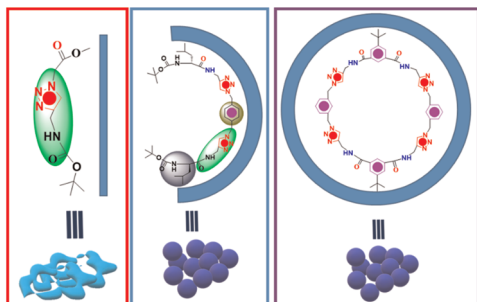
5366



### Theoretical study of the rearrangement reaction in bisorbicillinoid biosynthesis: insights into the molecular mechanisms involved

Moe Nakano and Hajime Sato\*

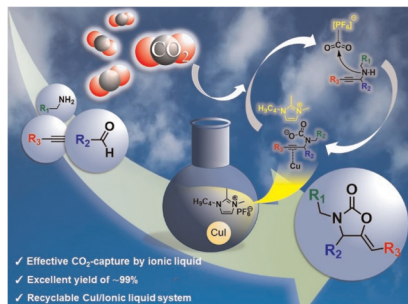
5372



### Expanded triazolophanes: a topological analysis of vesicular assembly

Appa Rao Sapala, Govind P. Maurya, Hanuman Singh, Neha Mehta, Tarak Karmakar and V. Haridas\*

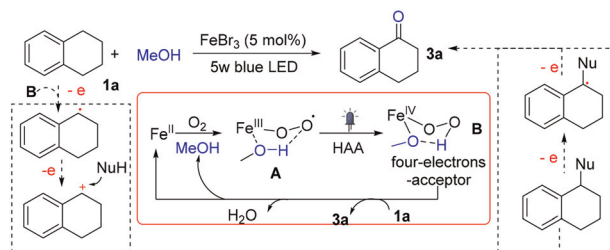
5377



### Highly efficient fixation of carbon dioxide into 2-oxazolidinones under mild conditions by using a reusable ionic liquid/CuI catalyst system

Mayumi Egashira and Hsiu-Hui Chen\*

5382



### Solvent-promoted photochemical carbonylation of benzylic C-H bonds under iron catalysis

Rui Qi, Tianwen Bai, Shuwang Tang, Ming Hou, Zhide Zhang, Wenlin Xie,\* Yangling Deng, Hongwei Zhou\* and Guanyinsheng Qiu\*

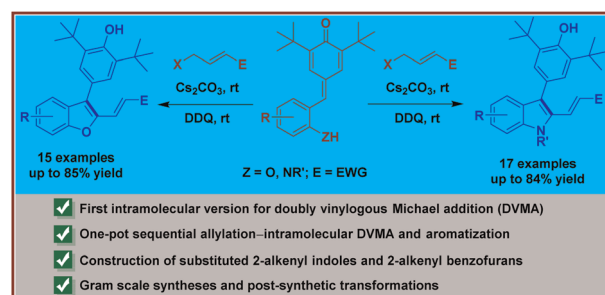


## PAPERS

5387

### Design and development of intramolecular doubly vinylogous Michael addition to access 3-aryl substituted 2-alkenyl-benzofurans and -indoles

Manyam Subbi Reddy, Jagadeesh Babu Nanubolu and Suriseti Suresh\*

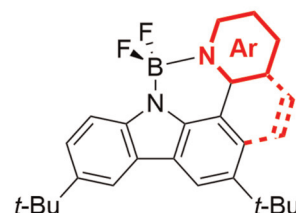


5398

### A series of boron difluoride complexes of azinylcarbazoles: synthesis and structure–property relationships

Koji Yamamoto,\* Shun Matsui, Shin-ichiro Kato and Yosuke Nakamura\*

### Structure–property relationships of $BF_2$ complexes of *azinyl*carbazoles

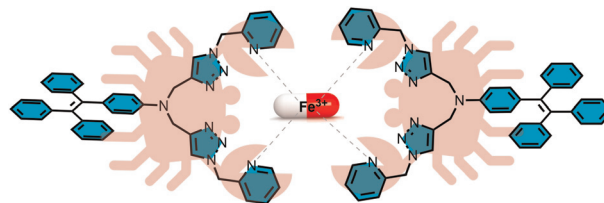


UV–vis absorption  
Fluorescence  
Phosphorescence  
Solid-state emission  
Redox activity

5406

### An AIE active fluorescence sensor for measuring $Fe^{3+}$ in aqueous media and an iron deficiency anemia drug

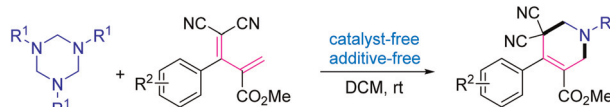
Oguzhan Dalkilic, Ebru Bozkurt, Ferruh Lafzi and Haydar Kilic\*



5413

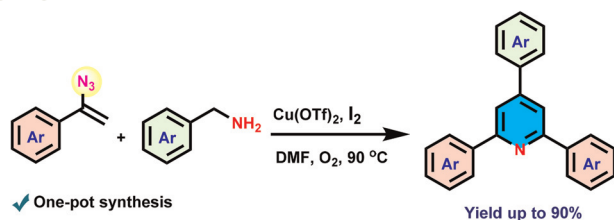
### Catalyst-free inverse-electron-demand aza-Diels–Alder reaction of 4,4-dicyano-2-methylenebut-3-enoates and 1,3,5-triazinanes: access to polysubstituted tetrahydropyridines

Dezhi Yang,\* Meng Zhu, Taimin Wang, Yixuan He, Lang Xie, Jiayong Zhang\* and Bin Cheng\*



## PAPERS

5419

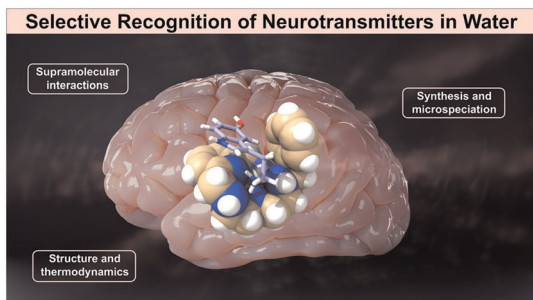


- ✓ One-pot synthesis
- ✓ Cascade cyclization
- ✓ No external N-source
- ✓ High product yields

### Copper catalysed oxidative cascade deamination/cyclization of vinyl azide and benzylamine for the synthesis of 2,4,6-triarylpyridines

Rana Chatterjee,\* Swadhapiya Bhukta, Kishore Kumar Angajala and Rambabu Dandela\*

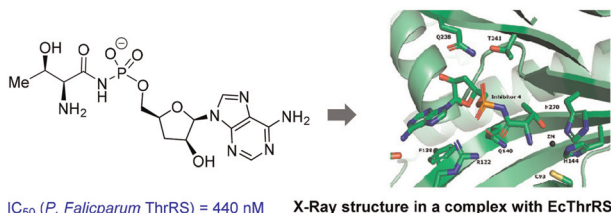
5424



### Selective recognition of neurotransmitters in aqueous solution by hydroxyphenyl aza-scorpion ligands

Begoña Verdejo,\* Mario Inclán, Salvador Blasco, Rafael Ballesteros-Garrido, Matteo Savastano, Antonio Bianchi\* and Enrique García-España\*

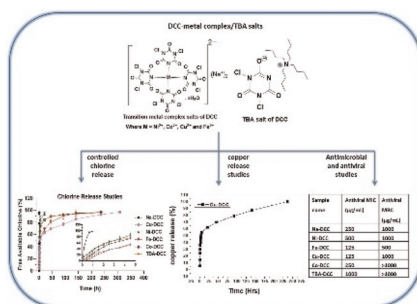
5433



### Synthesis and evaluation of an agrocin 84 toxic moiety (TM84) analogue as a malarial threonyl tRNA synthetase inhibitor

Jhon Alexander Rodriguez Buitrago, Gundars Leitis, Iveta Kaņepe-Lapsa, Anastasija Rudnickiha, Emilio Parisini\* and Aigars Jirgensons\*

5440



### Antimicrobial dichloroisocyanurate-salts for controlled release of chlorine

Pulikanti Guruprasad Reddy, Meital Reches, Tan Hu and Abraham J. Domb\*



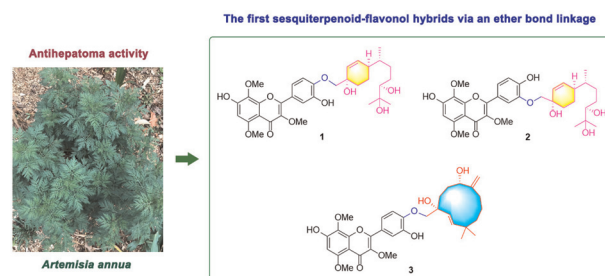


## PAPERS

5451

### Artemannuols A–C, novel sesquiterpenoid–flavonol hybrids with antihepatoma activity from *Artemisia annua*

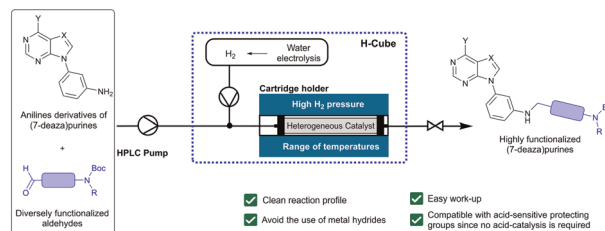
Xiao-Feng He, Meng-Fei Wang, Tian-Ze Li, Yun-Bao Ma and Ji-Jun Chen\*



5457

### Direct reductive amination of functionalized aldehydes with aniline derivatives of purines and 7-deazapurines

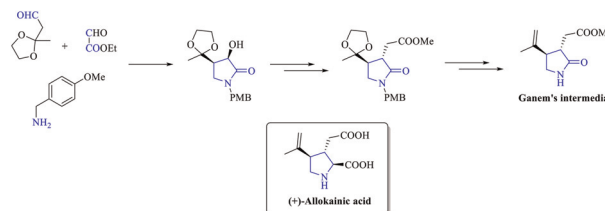
José-María Orduña, Natalia del Río and María-Jesús Pérez-Pérez\*



5469

### An approach towards (+)-allokainic acid via diphenylprolinol-catalyzed direct cross-aldol reaction

Shashank N. Mhaldar and Santosh G. Tilve\*



5475

### Fe-mediated oxidative cascade [1 + 2 + 3]-cyclization/esterification reaction: synthesis of 4-alkylated 1,4-dihydropyridines

Zhuoyuan Liu, Yulin Sun, Mingshuai Zhang, Longkun Chen, Xue-Bing Chen,\* Xiang Li\* and Fuchao Yu\*

