

# Organic & Biomolecular Chemistry

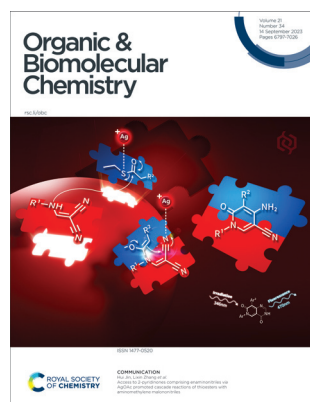
An international journal of synthetic, physical and biomolecular organic chemistry

[rsc.li/obc](http://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(34) 6797–7026 (2023)



### Cover

See Hui Jin, Lixin Zhang *et al.*, pp. 6881–6885.

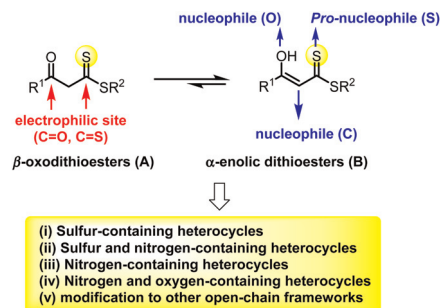
Image designed and produced by Yilei Yu and reproduced by permission of Hui Jin from *Org. Biomol. Chem.*, 2023, **21**, 6881.

## REVIEWS

6806

### A decade update on the application of $\beta$ -oxodithioesters in heterocyclic synthesis

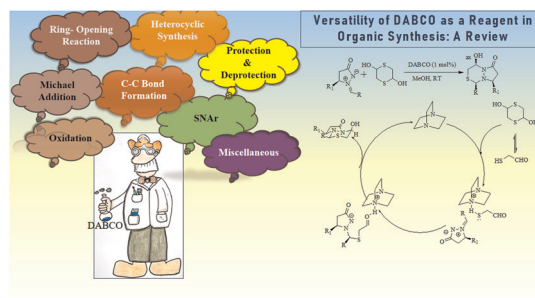
Zhi-Bing Dong,\* Zhiying Gong, Qian Dou, Bin Cheng\* and Taimin Wang\*



6830

### The versatility of DABCO as a reagent in organic synthesis: a review

Nitisha Chakraborty and Amrit Krishna Mitra\*



## 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

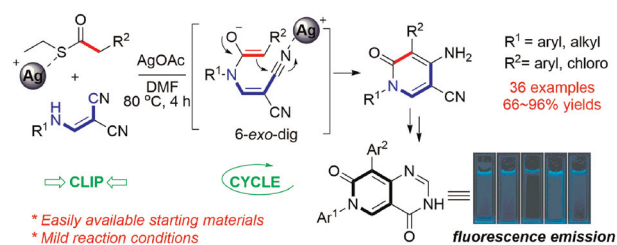


## COMMUNICATIONS

6881

### Access to 2-pyridinones comprising enamionitriles via AgOAc promoted cascade reactions of thioesters with aminomethylene malononitriles

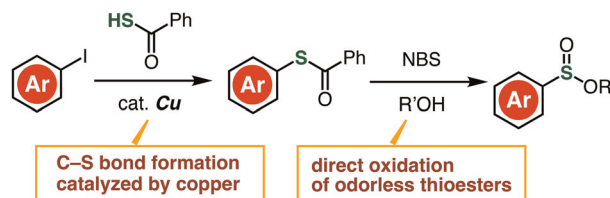
Chen Zhu, Jubao Zhou, Tianxing Li, Jiaxin Yang, Hui Jin\* and Lixin Zhang\*



6886

### Facile synthesis of sulfinate esters from aryl iodides via direct oxidation of thioesters

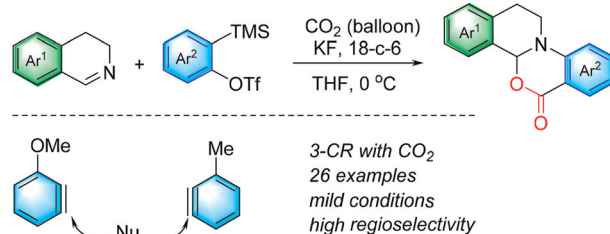
Keisuke Nakamura, Yukiko Kumagai, Akihiro Kobayashi, Minori Suzuki and Suguru Yoshida\*



6892

### Aryne and CO<sub>2</sub>-based formal [2 + 2 + 2] annulation to access tetrahydroisoquinoline-fused benzoxazinones

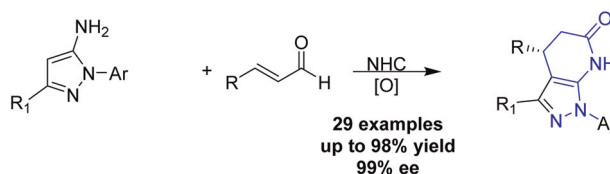
Shiqi Liu, Kun Zhang, Yutong Meng, Jiayi Xu\* and Ning Chen\*



6898

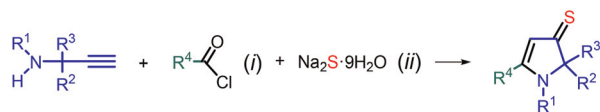
### Asymmetric synthesis of chiral pyrazolo[3,4-b]pyridin-6-ones under carbene catalysis

Qianqian Wu, Jinna Han, Jie Huang, Hailong Zhang, Min Ren, Xiaoxiang Zhang and Zhenqian Fu\*



## COMMUNICATIONS

6903



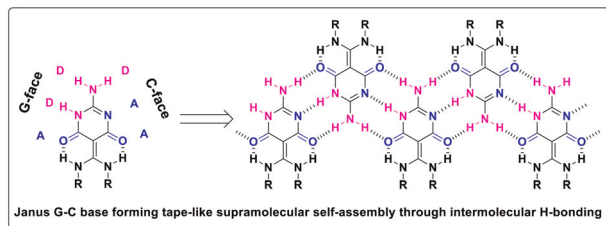
one-pot  
gram-scalable  
broad substrate scope  
good to excellent yields

26 examples  
up to 91%

### Dihydropyrrole-3-thiones: one-pot synthesis from propargylamines, acyl chlorides and sodium sulfide

Pavel A. Volkov, Kseniya O. Khrapova, Ekaterina M. Vyi, Anton A. Telezhkin, Ivan A. Bidusenko, Alexander I. Albanov, Elena Yu. Schmidt and Boris A. Trofimov\*

6914

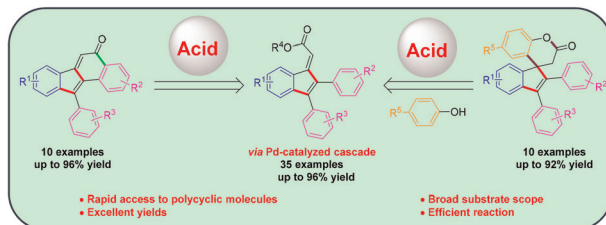


Janus G-C base forming tape-like supramolecular self-assembly through intermolecular H-bonding

### 2-Amino-5-methylene-pyrimidine-4,6-dione-based Janus G–C nucleobase as a versatile building block for self-assembly

Mahendra A. Wagh, Dinesh R. Shinde, Rama Krishna Gamidi and Gangadhar J. Sanjayan\*

6919

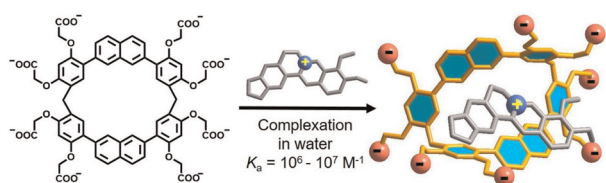


### A two-step access to fused-/spiro-polycyclic frameworks via double Heck cascade and acid-driven processes

Komal Goel and Gedu Satyanarayana\*

## PAPERS

6926



### Synthesis of a water-soluble naphthalene-based macrocycle and its host–guest properties

Ming Dong,\* Wanru Qi, Guang Sun, Kaidi Xu, Yixin Ma, Jing-Fang Lv, Liya Zhao, Zhi-Yuan Zhang and Chunju Li\*

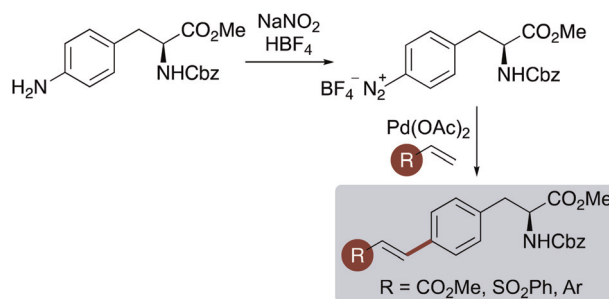


## PAPERS

6932

### Fluorescent $\alpha$ -amino acids *via* Heck–Matsuda reactions of phenylalanine-derived arenediazonium salts

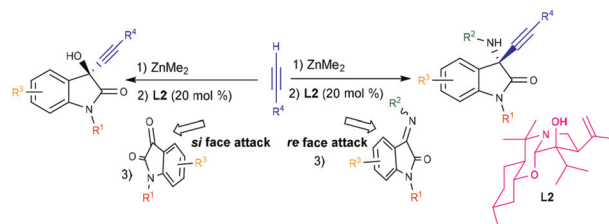
Rochelle McGrory, Rebecca Clarke, Olivia Marshall and Andrew Sutherland\*



6940

### Enantioselective synthesis of 3-hydroxy- and 3-amino-3-alkynyl-2-oxindoles by the dimethylzinc-mediated addition of terminal alkynes to isatins and isatin-derived ketimines

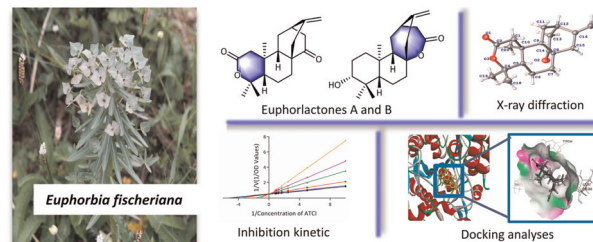
Elena Prieto, Jorge D. Martín, Javier Nieto\* and Celia Andrés\*



6949

### Discovery of two *ent*-atisane diterpenoid lactones with AChE inhibitory activity from the roots of *Euphorbia fischeriana*

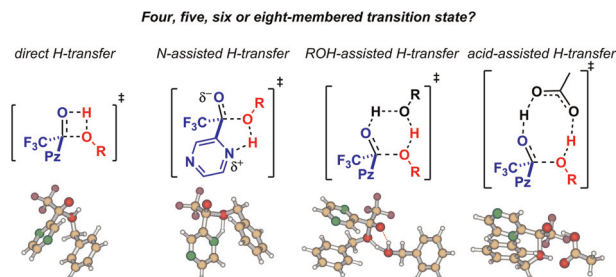
Jiangchun Wei, Zhiyue Li, Min Shan, Fengzhi Wu, Limin Li, Yucui Ma, Junhong Wu, Xiping Li, Yaqian Liu, Zhengxi Hu,\* Yonghui Zhang\* and Zhengzhi Wu\*



6956

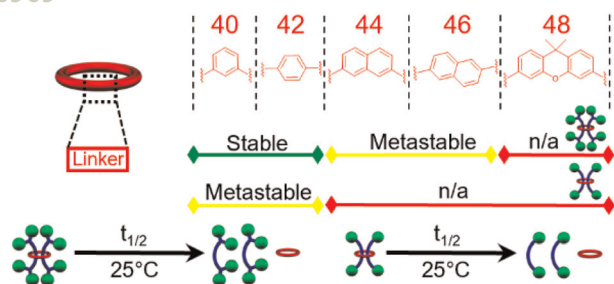
### Hemiacetal-based dynamic systems: a new mechanistic insight

Radek Coufal,\* Zdeněk Tošner, Dušan Drahoňovský and Jiří Vohlídal



## PAPERS

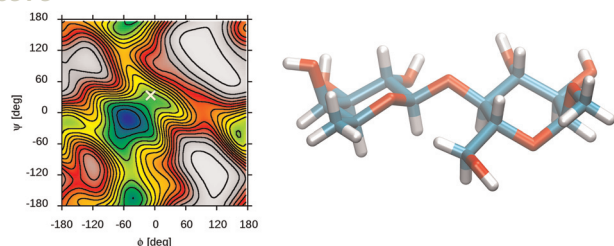
6969



### Balancing ring and stopper group size to control the stability of doubly threaded [3]rotaxanes

Jerald E. Hertzog, Guancen Liu, Benjamin W. Rawe, Vincent J. Maddi, Laura F. Hart, Jongwon Oh, Neil D. Dolinski and Stuart J. Rowan\*

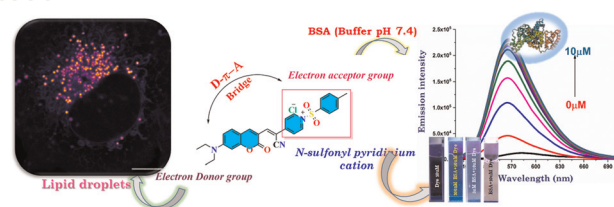
6979



### Conformational flexibility of the disaccharide $\beta$ -L-Fucp-(1 $\rightarrow$ 4)- $\alpha$ -D-Glcp-OMe as deduced from NMR spectroscopy experiments and computer simulations

Wojciech Plazinski, Thibault Angles d'Ortoli and Göran Widmalm\*

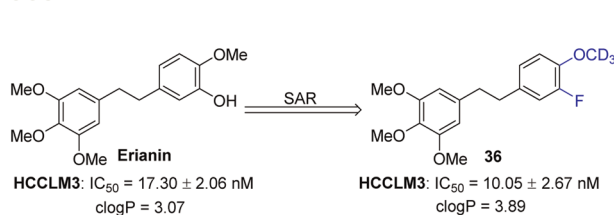
6995



### N-Functionalized fluorophores: detecting urinary albumin and imaging lipid droplets

Mohini Ghorpade, Ramprasad Regar, Virupakshi Soppina\* and Sriram Kanvah\*

7005



### Design, synthesis and structure–activity relationship studies on erianin analogues as pyruvate carboxylase inhibitors in hepatocellular carcinoma cells

Hailong Shi, Jinlian Yang, Zeen Qiao, Lingyu Li, Gang Liu, Qi Dai, Li Xu, Wei Jiao, Guolin Zhang, Fei Wang, Xiaoxia Lu\* and Xiaofeng Ma\*





7018

## Differential detection of aspartic acid in MCF-7 breast cancer cells

Priyotosh Ghosh, Tanmoy Das,  
Ansuman Chattopadhyay and Prithidipa Sahoo\*

