

Organic & Biomolecular Chemistry

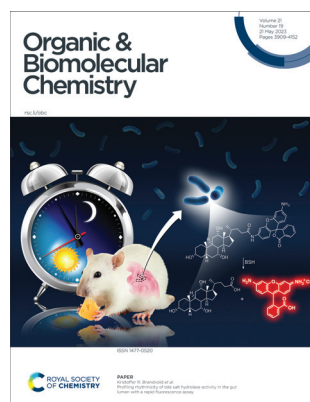
An international journal of synthetic, physical and biomolecular organic chemistry

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(19) 3909–4152 (2023)



Cover

See Kristoffer R. Brandvold
et al., pp. 4028–4038.

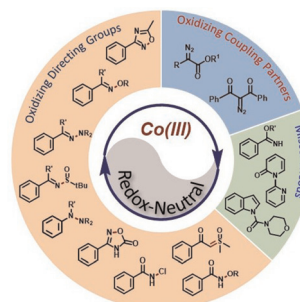
Image comprised of image of clock © Jacek Kita/Shutterstock, image of mouse © Africa Studio/Shutterstock; all else Battelle Memorial Institute and reproduced by permission of Kristoffer Brandvold from *Org. Biomol. Chem.*, 2023, **21**, 4028.

REVIEWS

3918

Redox-neutral C–H annulation strategies for the synthesis of heterocycles via high-valent Cp*Co(III) catalysis

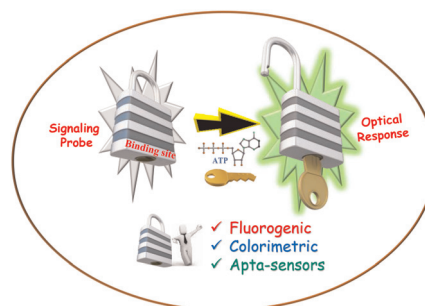
Nilanjan Bhaduri and Amit B. Pawar*



3942

An overview on the development of different optical sensing platforms for adenosine triphosphate (ATP) recognition

Subramaniyam Sivagnanam, Prasenjit Mahato* and Priyadip Das*



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

For pre-submission queries please contact Rebecca Garton, Executive Editor. Email: 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

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

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 & Biomolecular Chemistry

Rapid publication of high quality organic chemistry research

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 Krenke, 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

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

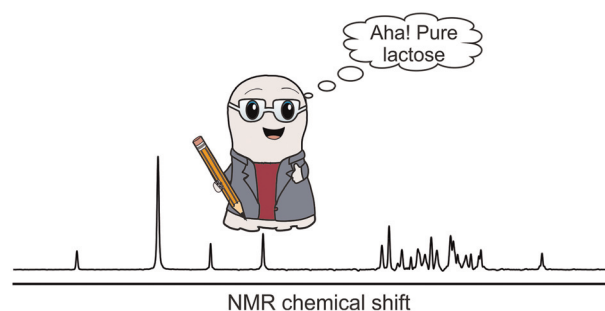


COMMUNICATIONS

3984

Resolving the complexity in human milk oligosaccharides using pure shift NMR methods and CASPER

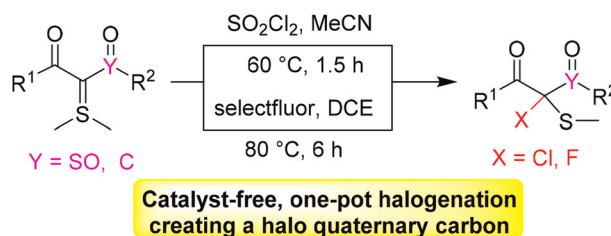
Marshall J. Smith, Emma L. Gates, Göran Widmalm, Ralph W. Adams, Gareth A. Morris and Mathias Nilsson*



3991

Demethyl oxidative halogenation of diacyl dimethylsulfonium methylides

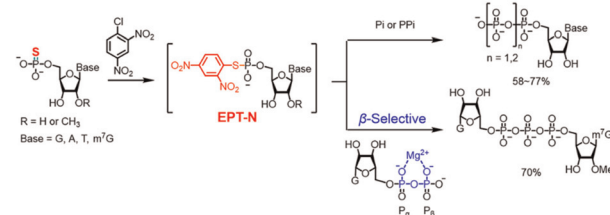
Duo Fu, Changmeng Xi and Jiaxi Xu*



3997

Synthesis of nucleoside oligophosphates by electrophilic activation of phosphorothioate

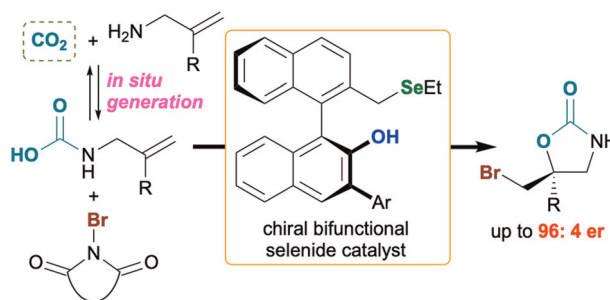
Shogo Hasegawa, Masahito Inagaki, Shunichi Kato, Zhenmin Li, Yasuaki Kimura* and Hiroshi Abe*



4002

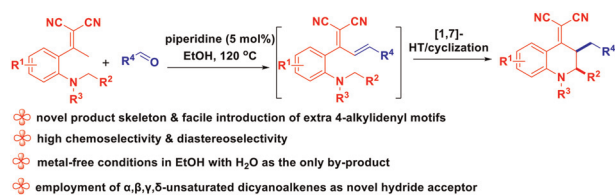
Catalytic asymmetric CO₂ utilization reaction for the enantioselective synthesis of chiral 2-oxazolidinones

Ryuichi Nishiyori, Taiki Mori and Seiji Shirakawa*



COMMUNICATIONS

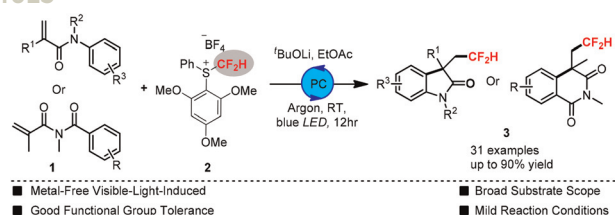
4007



Chemoselective and diastereoselective construction of 4-alkylidene-tetrahydroquinoline via a redox-neutral vinylogous cascade [1,7]-hydride transfer/6-endo-trig cyclization strategy

Yufeng Wang, Qiang Li, Xiaopei Song, Jing Wang, Xiangcong Yin, Shuai-Shuai Li* and Liang Wang*

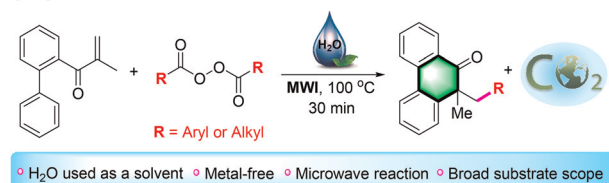
4013



Visible-light photoredox-catalyzed radical aryldifluoromethylation of *N*-arylacrylamides with *S*-(difluoromethyl)sulfonium salt

Ya-Shi Zhao, Sheng-Jie Huang, Yuan-Qing Gu and Guo-Kai Liu*

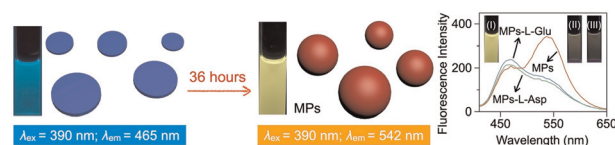
4018



Microwave-promoted radical addition/cyclization of biaryl vinyl ketones with diacyl peroxides in water under metal-free conditions

Xingyu Yang, Gan Zhang, Jingwen Zhou, Chao Zhou,* Lei Wang and Pinhua Li*

4022



Efficient detection of L-aspartic acid and L-glutamic acid by self-assembled fluorescent microparticles with AIE and FRET activities

Wen-Juan Qu,* Tingting Liu, Yongping Chai, Dongyan Ji, Yu-Xin Che, Jian-Peng Hu, Hong Yao, Qi Lin, Tai-Bao Wei and Bingbing Shi*

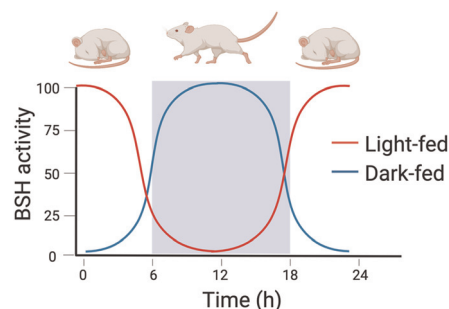


PAPERS

4028

Profiling rhythmicity of bile salt hydrolase activity in the gut lumen with a rapid fluorescence assay

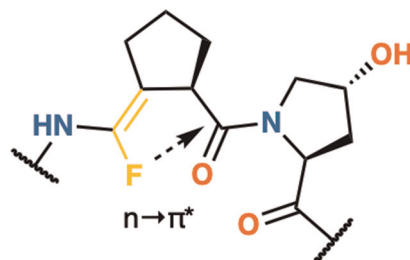
Chathuri J. Kombala, Neha Agrawal, Agne Sveistyte, Iliia N. Karatsoreos, Hans P. A. Van Dongen and Kristoffer R. Brandvold*



4039

A fluoro-alkene mimic of Gly-*trans*-Pro produces a stable collagen triple helix

Paul J. Arcoria and Felicia A. Etzkorn*

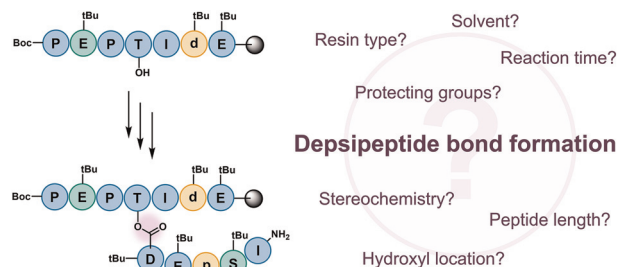


Gly-Pro fluoro-alkene in collagen

4052

Factors influencing on-resin depsipeptide bond formation: case studies on daptomycin- and brevicidine-derived sequences

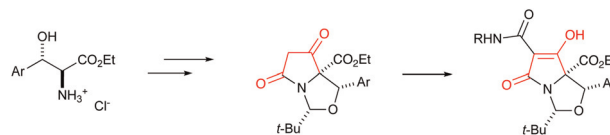
Dennise Palpal-latoc, Margaret A. Brimble, Paul W. R. Harris* and Aimee J. Horsfall*



4061

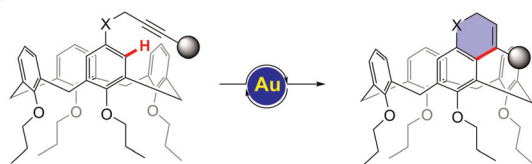
Tetramate derivatives by chemoselective Dieckmann ring closure of *allo*-phenylserines, and their antibacterial activity

Liban Saney, Kirsten E. Christensen, Miroslav Genov, Alexander Pretsch, Dagmar Pretsch and Mark G. Moloney*



PAPERS

4072

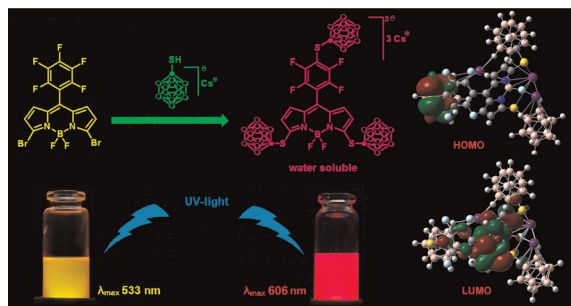


- Inherently chiral calix[4]arenes via gold(I)-catalysed hydroarylations of alkynes
- Highly regioselective 6-endo-dig annulations
- Broad scope (> 15 examples) and expedient access to difunctionalised chiral scaffolds
- Preliminary results for the enantioselective reaction

Gold(I)-catalysed hydroarylations of alkynes for the synthesis of inherently chiral calix[4]arenes

Gabriele Giovanardi, Gabriele Scarica, Valentina Pirovano, Andrea Secchi* and Gianpiero Cera*

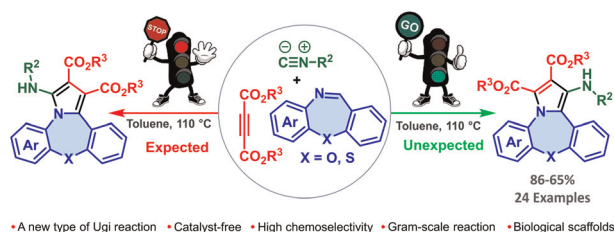
4084



BODIPY derivatives modified with carborane clusters: synthesis, characterization and DFT studies

Andrei V. Zaitsev, Sergey S. Kiselev, Alexander F. Smol'yakov, Yury V. Fedorov, Elena G. Kononova, Yurii A. Borisov and Valentina A. Ol'shevskaya*

4095

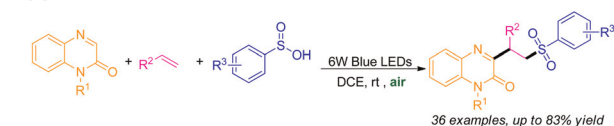


- A new type of Ugi reaction
- Catalyst-free
- High chemoselectivity
- Gram-scale reaction
- Biological scaffolds

The new synthesis of pyrrole-fused dibenzo[b,f][1,4]oxazepine/thiazepines by the pseudo-Joullié–Ugi reaction via an unexpected route with high chemoselectivity

Mohammad Taghi Nazari, Masoomah Ahmadi, Maryam Ghasemi, Ahmad Shaabani* and Behrouz Notash

4109



- Mild reaction conditions
- Visible light as eco-friendly energy source
- Ambient air as the sole oxidant
- Metal-, strong oxidant- and external photocatalyst-free

A visible-light-mediated cascade reaction of quinoxalin-2(1H)-ones, alkenes, and sulfinic acids

Sha Peng, Long-Yong Xie and Luo Yang*

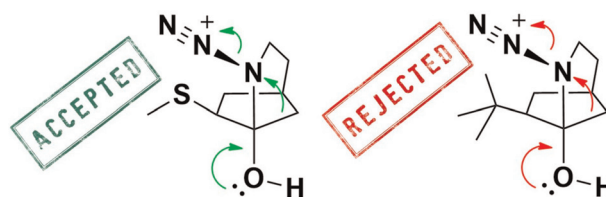


PAPERS

4114

Substituent effects on intramolecular Schmidt reactions: a theoretical study on the formation of bridged lactams

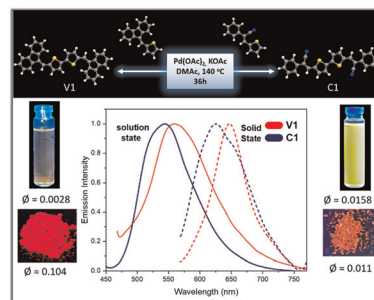
Guilherme L. Kosteczka, Rafael N. Soek, Wagner E. Richter and Renan B. Campos*



4123

Solid-state red-emissive (cyano)vinylene heteroaromatics via Pd-catalysed C–H homocoupling

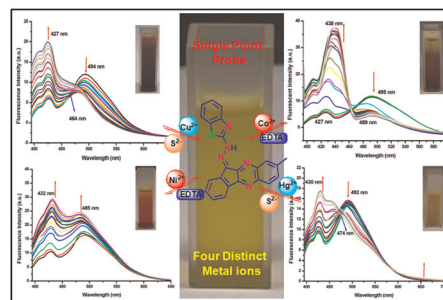
Atul B. Nipate and M. Rajeswara Rao*



4130

Synthesis of a quinoxaline–hydrazinobenzothiazole based probe—single point detection of Cu²⁺, Co²⁺, Ni²⁺ and Hg²⁺ ions in real water samples

Denzil Britto Christopher Leslee, Udhayadharshini Venkatachalam, Jayapratha Gunasekaran, Sekar Karuppannan and Shanmuga Bharathi Kuppannan*



4144

An expedient copper-catalysed asymmetric synthesis of γ -lactones and γ -lactams. Application to the synthesis of lucidulactone A

O. Stephen Ojo, David L. Hughes and Christopher J. Richards*

