

# Organic & Biomolecular Chemistry

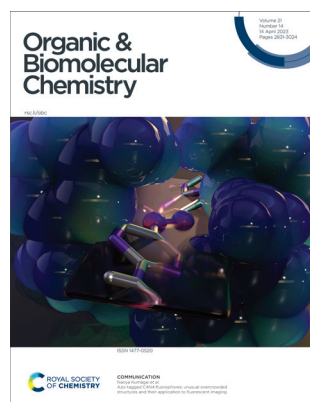
An international journal of synthetic, physical and biomolecular organic chemistry

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(14) 2831–3024 (2023)



### Cover

See Naoya Kumagai *et al.*, pp. 2889–2893.

Image reproduced by permission of Naoya Kumagai from *Org. Biomol. Chem.*, 2023, **21**, 2889.



### Inside cover

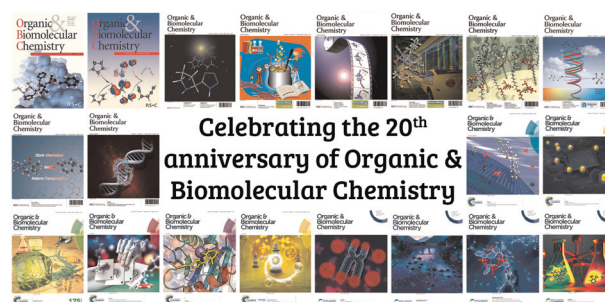
See Mara Di Filippo and Marcus Baumann, pp. 2930–2934.

Cover image designed and reproduced by permission of Mara Di Filippo from *Org. Biomol. Chem.*, 2023, **21**, 2930.

## EDITORIAL

2841

### Celebrating the 20<sup>th</sup> anniversary of *Organic & Biomolecular Chemistry*

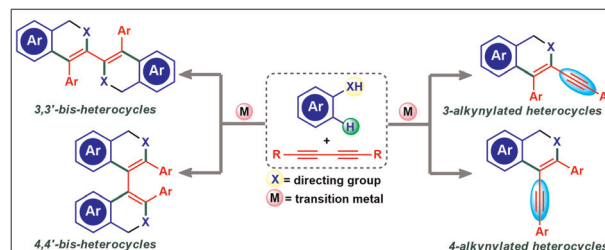


## REVIEWS

2842

### Transition metal-catalyzed C–H/C–C activation and coupling with 1,3-diyne

Bedadyuti Vedvyas Pati, Nitha Nahan Puthalath, Shyam Kumar Banjare, Tanmayee Nanda and Ponneri C. Ravikumar\*



## 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

Elizabeth Krenske, University of Queensland, Australia

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

### 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  
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 Echavarrén, 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  
Mahesh Lakshman, The City College of New York, USA  
Shih-Yuan Liu, Boston College, USA  
Geraldine Masson, Institut de Chimie des Substances Naturelles (CNRS), France  
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

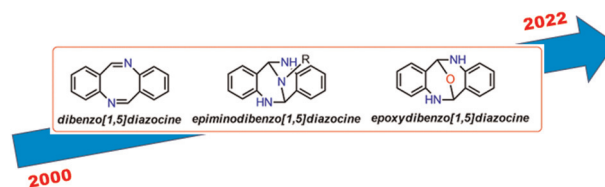


## REVIEWS

2870

**Synthetic strategies and diversification of dibenzo[1,5]diazocines**

Abdul Qaiyum Ramle\* and Edward R. T. Tiekink

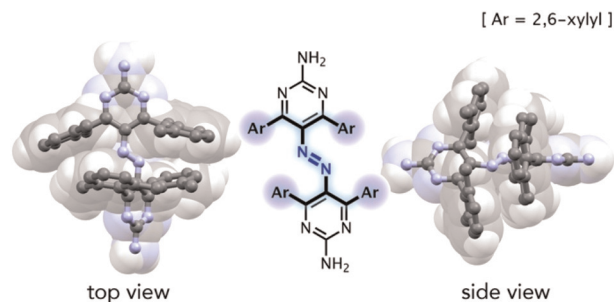


## COMMUNICATIONS

2889

**Azo-tagged C4N4 fluorophores: unusual overcrowded structures and their application to fluorescent imaging**

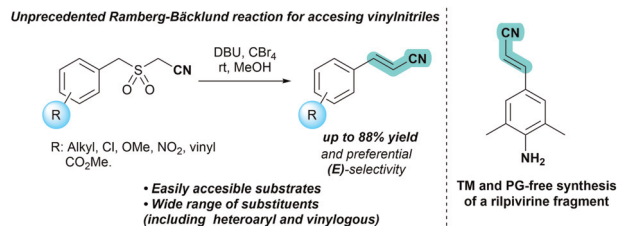
Miki Kohei, Naoki Takizawa, Ryosuke Tsutsumi, Wei Xu and Naoya Kumagai\*



2894

**Stereoselective synthesis of vinyl nitriles through a Ramberg–Bäcklund approach**

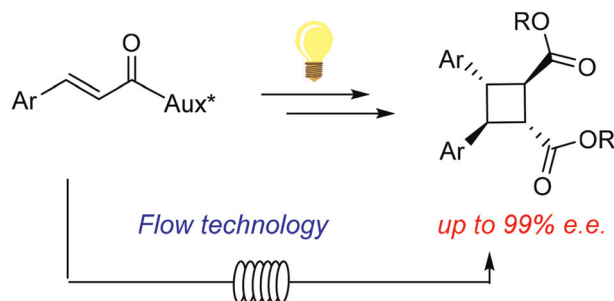
Octavio A. Valle-González, Ángel I. Salazar-Bello and J. Armando Luján-Montelongo\*



2899

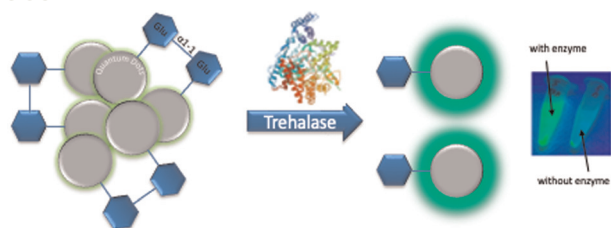
**Stereoselective [2 + 2] photodimerization: a viable strategy for the synthesis of enantiopure cyclobutane derivatives**

Fabrizio Medici, Alessandra Puglisi, Sergio Rossi, Laura Raimondi and Maurizio Benaglia\*



## COMMUNICATIONS

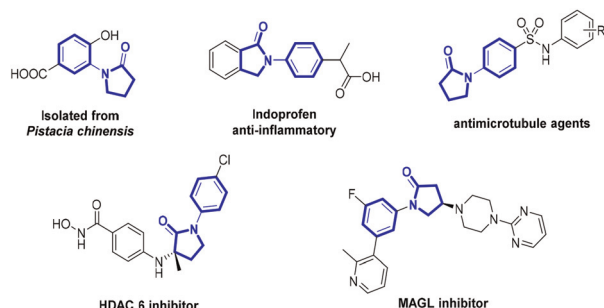
2905



## Glycosylated quantum dots as fluorometric nanoprobes for trehalase

Danielle D. Barnes, Vera Kuznetsova, Anastasia Vishneratina, Finn Purcell-Milton, Mikhail A. Baranov, Dylan M. Lynch, Harlei Martin, Yurii K. Gun'ko\* and Eoin M. Scanlan\*

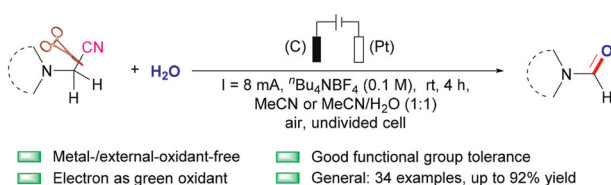
2910



## Regioselective C–H chalcogenylation and halogenation of arenes and alkenes under metal-free conditions

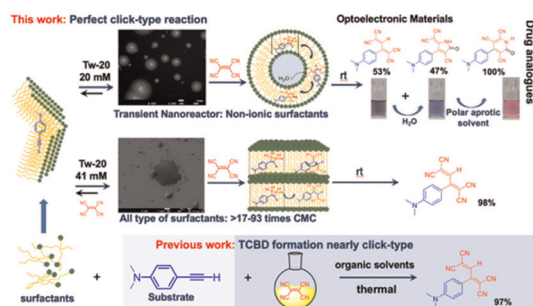
Bin Li, Mingli Hu, Jun Ge, Wei Xu, Jinghan Wu, Yao Tong, Zhengyi Zhao, Xiuxiu Liu\* and Ling He\*

2917

Electrochemically enabled decyanative C(sp<sup>3</sup>)–H oxygenation of *N*-cyanomethylamines to formamides

Mu-Jia Luo,\* Wei Zhou, Ruchun Yang, Haixin Ding, Xian-Rong Song and Qiang Xiao\*

2922



## A study of [2 + 2] cycloaddition–retroelectrocyclization in water: observation of substrate-driven transient-nanoreactor-induced new reactivity

K. M. Neethu, Kritika Nag, Arif Hassan Dar, Ashima Bajaj, S. Arya Gopal, Vijayendran Gowri, Mithilesh Nagpure, Shaifali Sartaliya, Raina Sharma, Arun Kumar Solanki, Md. Ehesan Ali, Azhagumuthu Muthukrishnan and Govindasamy Jayamurugan\*

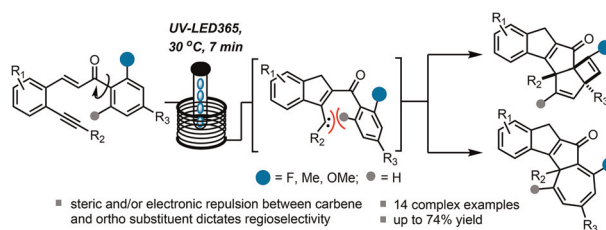


## PAPERS

2930

## Carbene-controlled regioselectivity in photochemical cascades

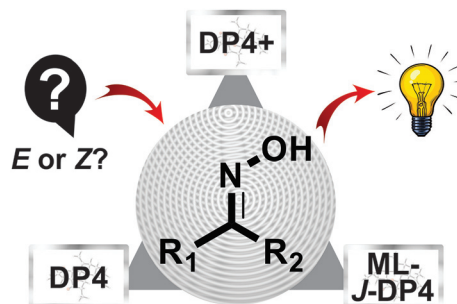
Mara Di Filippo and Marcus Baumann\*



2935

## E/Z configurational determination of oximes and related derivatives through quantum mechanics NMR calculations: scope and limitations of the leading probabilistic methods

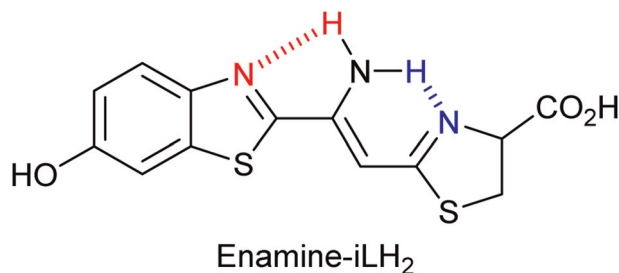
Iván Cortés and Ariel M. Sarotti\*



2941

## Bioluminescence, photophysical, computational and molecular docking studies of fully conformationally restricted enamine infraluciferin

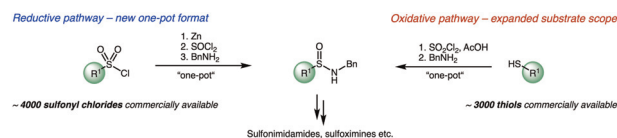
Chia-Hao Chang, Sandra Gómez, Danielle M. Fontaine, Panagiotis Fikas, Bruce R. Branchini and James C. Anderson\*



2950

## Complementary strategies for synthesis of sulfinamides from sulfur-based feedstock

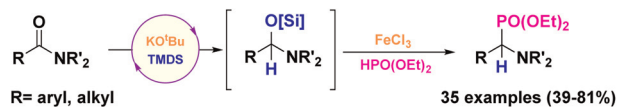
Miloš Jabczun, Vladimír Nosek and Jiří Míšek\*





## PAPERS

2955

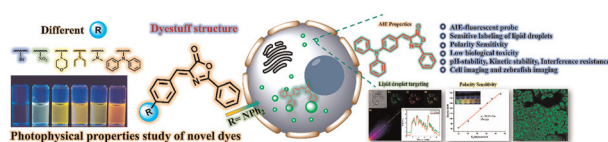


- Cheap and simple catalysts
- Broad substrate scope
- mild reaction conditions
- One pot synthesis

### Sequential $KO^tBu/FeCl_3$ -catalyzed reductive phosphonylation of tertiary amides for the synthesis of $\alpha$ -amino phosphonates and phosphines

Yue Wang, Xiaoyu Wu, Liqun Yang, Wei Liu, Zhaoguo Zhang and Xiaomin Xie\*

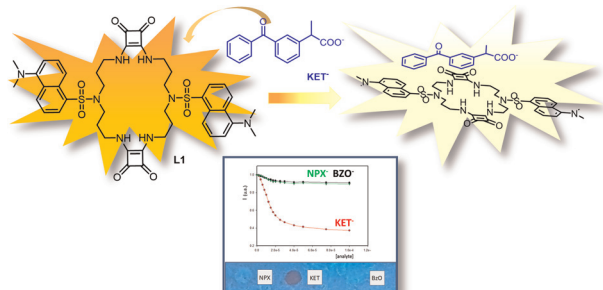
2960



### Effect of different substituents on the fluorescence properties of precursors of synthetic GFP analogues and a polarity-sensitive lipid droplet probe with AIE properties for imaging cells and zebrafish

Wei-Long Cui, Mao-Hua Wang, Yun-Hao Yang and Jian-Yong Wang\*

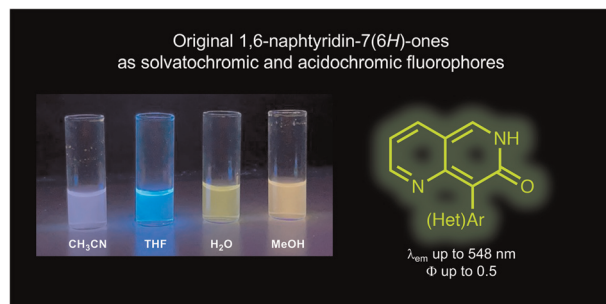
2968



### Fluorescent sensing of non-steroidal anti-inflammatory drugs naproxen and ketoprofen by dansylated squaramide-based receptors

Giacomo Picci, M. Carla Aragoni, Massimiliano Arca, Claudia Caltagirone,\* Mauro Formica, Vieri Fusi,\* Luca Giorgi, Filippo Ingargiola, Vito Lippolis, Eleonora Macedi, Luca Mancini, Liviana Mummolo and Luca Prodi\*

2976



### 1,6-Naphthyridin-7(6H)-ones: synthesis and optical properties

Anissa Beghennou, Geoffrey Gontard, Héloïse Dossmann, Kévin Passador, Serge Thorimbert, Vincent Corcé\* and Candice Botuha\*

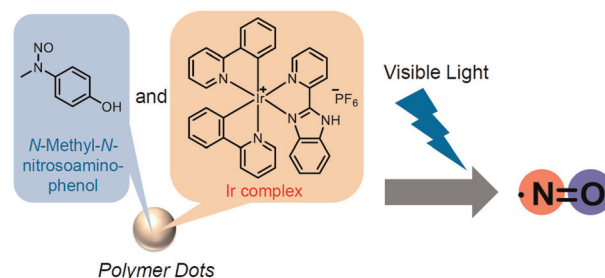


## PAPERS

2983

### Photoinduced NO-release from polymer dots doped with an Ir(III) complex and *N*-methyl-*N*-nitroso-4-aminophenol

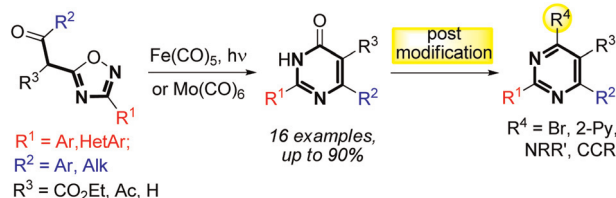
Daisuke Saitoh, Ayumi Suzuki, Naoya Ieda, Zuoyue Liu, Yasuko Osakada, Mamoru Fujitsuka, Mitsuyasu Kawaguchi and Hidehiko Nakagawa\*



2990

### Metal carbonyl mediated rearrangement of 5-(2-oxoalkyl)-1,2,4-oxadiazoles: synthesis of fully substituted pyrimidines

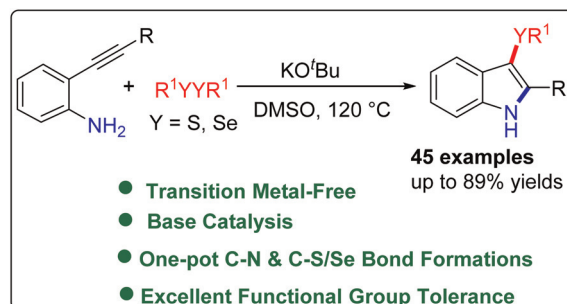
Ekaterina E. Galenko, Timur O. Zanakhov, Mikhail S. Novikov and Alexander F. Khlebnikov\*



3002

### Base-mediated chalcogenoaminative annulation of 2-alkynylanilines for direct access to 3-sulfenyl/selenenyl-1*H*-indoles

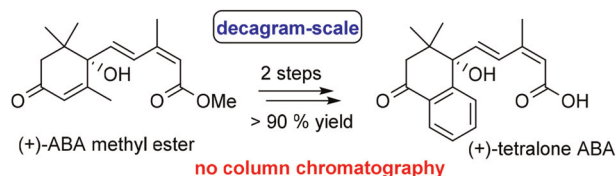
Wei-Ching Chen, Rekha Bai, Wan-Lin Cheng, Chun-Yu Peng, Daggula Mallikarjuna Reddy, Satpal Singh Badsara and Chin-Fa Lee\*



3014

### An efficient and scalable synthesis of a persistent abscisic acid analog (+)-tetralone ABA

Naveen Diddi, Leon Lai, Christine Ha Nguyen, Dawei Yan, Eiji Nambara and Suzanne Abrams\*



## CORRECTIONS

3020

**Correction: An efficient metal free synthesis of 2-aminobenzothiozoles – a greener approach**

Krithika Ganesh, Ganesh Sambasivam,\* Govindarajulu Gavara, Ramaraj S, Gaikwad Rajendra and S. Karthikeyan\*

3021

**Correction: An asymmetric metal-templated route to amino acids with an isoquinolone core via a Rh(III)-catalyzed coupling of aryl hydroxamates with chiral propargylglycine Ni(II) complexes**

Mikhail A. Arsenov, Nadezhda V. Stoletova, Tat'yana F. Savel'yeva, Alexander F. Smol'yakov, Victor I. Maleev, Dmitry A. Loginov\* and Vladimir A. Larionov\*

