

# ChemComm

Chemical Communications

rsc.li/chemcomm

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.

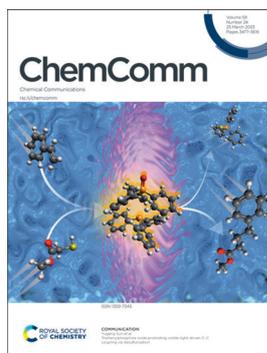
## IN THIS ISSUE

ISSN 1359-7345 CODEN CHCOFS 59(24) 3477-3616 (2023)



### Cover

See Samuel A. Johnson *et al.*, pp. 3542–3545. Image reproduced by permission of Samuel A. Johnson from *Chem. Commun.*, 2023, 59, 3542.



### Inside cover

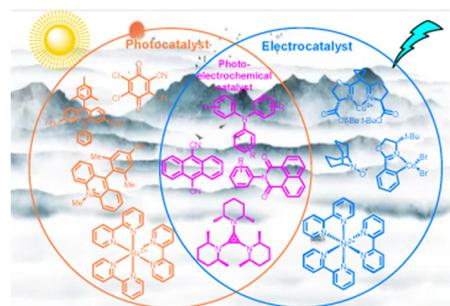
See Yugang Sun *et al.*, pp. 3546–3549. Image reproduced by permission of Shea Stewart and Yugang Sun from *Chem. Commun.*, 2023, 59, 3546.

## HIGHLIGHT

3487

### Contemporary photoelectrochemical strategies and reactions in organic synthesis

Ling Qian and Min Shi\*

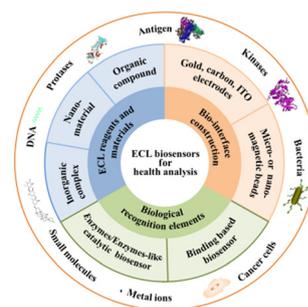


## FEATURE ARTICLES

3507

### Recent advances and challenges in developing electrochemiluminescence biosensors for health analysis

Yuxi Wei, Honglan Qi and Chengxiao Zhang\*



## Editorial Staff

### Executive Editor

Richard Kelly

### Deputy Editor

Harriet Riley

### Editorial Production Manager

Helen Saxton

### Development Editor

Danny Andrews

### Senior Publishing Editor

Becky Webb

### Publishing Editors

Kirstine Anderson, Matthew Bown, Laura Cooper, Emily Cuffin-Munday, Hannah Fielding, Clare Fitzgerald, Anoushka Handa, Claire Harding, Alan Holder, Rosie Rothwell, Donna Smith, Laura Smith

### Editorial Assistant

Jade Holliday

### Publishing Assistant

Natalie Ford

### Publisher

Jeanne Andres

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

For pre-submission queries please contact

Richard Kelly, Executive Editor.

Email [chemcomm-rsc@rsc.org](mailto:chemcomm-rsc@rsc.org)

Chemical Communications (print: ISSN 1359-7345; electronic: ISSN 1364-548X) is published 100 times a year by the Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, UK CB4 0WE.

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: £3,553 / US\$6,258. 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](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)

# ChemComm

Chemical Communications

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

## Editorial Board

### Chair

Douglas Stephan, University of Toronto

### Associate Editors

Lutz Ackermann, University of Göttingen

Daive Bonifazi, University of Vienna

Rachel Caruso, RMIT University

Fengtao Fan, Chinese Academy of Sciences

Itaru Hamachi, Kyoto University

Michael Hardie, University of Leeds

Kim Jelfs, Imperial College London

Chao-Jun Li, McGill University

Connie Lu, University of Minnesota, US

Marinella Mazzanti, EPFL, Switzerland

Amy Prieto, Colorado State University

Yang Tian, East China Normal University

Sandeep Verma, Indian Institute of

Technology Kanpur

## Advisory Board

Brendan Abrahams, University of Melbourne

Polly Arnold, University of Edinburgh

Louise Berben, University of California, Davis

Penny Brothers, Australian National University

Wesley Browne, University of Groningen

Raffaella Buonsanti, EPFL

Luiz Henrique Catalani, University of São Paulo

Xiao-Ming Chen, Sun Yat-Sen University

Lifeng Chi, Soochow University

Arindam Chowdhury, Indian Institute of

Technology Bombay

Derrick Clive, University of Alberta

Seth Cohen, University of California, San Diego

Marcetta Darensbourg, Texas A&M University

Jyotirmayee Dash, Indian Association for the

Cultivation of Science

Gautam R. Desiraju, Indian Institute of

Science, Bangalore

Abhishek Dey, Indian Association for the

Cultivation of Science (IACS)

Josh Figueroa, University of California, San

Diego

Lutz Gade, University of Heidelberg

Sujit Ghosh, Indian Institute of Science

Education of Research, India

Nathan Gianneschi, University of California,

San Diego

Robert Gilliard Jr., University of Virginia

David Gonzalez-Rodriguez, Autonomous

University of Madrid

Rebecca Goss, University of

St Andrews

Mike Greaney, University of Manchester

Shaojun Guo, Peking University

Michael Hardie, University of Leeds

Amanda Hargrove, Duke University

Craig Hawker, University of California, Santa

Barbara

Feihe Huang, Zhejiang University

Todd Hudnall, Texas State University

Ilich A. Ibarra Alvarado, National University

of Mexico

Hiroshi Kageyama, Kyoto University

Jong Seung Kim, Korea University

Shu Kobayashi, University of Tokyo

Mi Hee Lim, Ulsan National Institute of

Science and Technology (UNIST)

Teck-Peng Loh, Nanyang

Technological University

Tien-Yau Luh, National Taiwan University

Doug MacFarlane, Monash University

Hiromitsu Maeda, Ritsumeikan University

Silvia Marchesan, University of Trieste

Nazario Martin, Complutense University of

Madrid

Keiji Maruoka, Kyoto University

Alexander Miller, University of North Carolina

at Chapel Hill

Wonwoo Nam, Ewha Womans University

Jean-Francois Nierengarten, University of

Strasbourg

Thalappil Pradeep, Indian Institute of

Technology Madras

S Ramakrishnan, Indian Institute of Science

Erwin Reisner, University of Cambridge

Robin Rogers, McGill University

Paolo Samori, University of Strasbourg

Ellen Sletten, University of California, Los

Angeles

David Smith, University of York

Mizuki Tada, Nagoya University

Christine Thomas, Ohio State University

Zhong-Qun Tian, Xiamen University

Tomas Torres, Autonomous University of

Madrid

Helma Wennemers, ETH Zurich

Judy Wu, University of Houston

Yi Xie, University of Science and Technology

of China

Xianran Xing, University of Science and

Technology Beijing

Shuli Yu, Shanghai Institute of Organic

Chemistry, Chinese Academy of Sciences

Atsuo Yamada, University of Tokyo

Qiang Zhang, Tsinghua University

Xi Zhang, Tsinghua University

Wenwan Zhong, University of California,

Riverside

Eli Zysman-Colman, University of St. Andrews

## Information for Authors

Full details on how to submit material for publication in Chemical Communications 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/chemcomm](http://rsc.li/chemcomm)

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.

© The paper used in this publication meets the requirements of ANSI/NISO Z39.48-1992 (Permanence of Paper).

Registered charity number: 207890

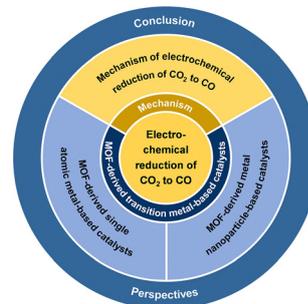


## FEATURE ARTICLES

3523

### MOF-derived transition metal-based catalysts for the electrochemical reduction of CO<sub>2</sub> to CO: a mini review

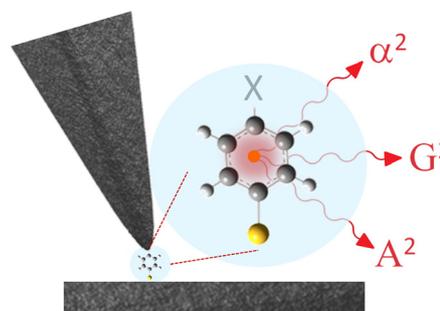
Jiaxin Li, Baogang Zhang, Baoxia Dong\* and Ligang Feng



3536

### High spatial resolution ambient tip-enhanced (multipolar) Raman scattering

Patrick Z. El-Khoury

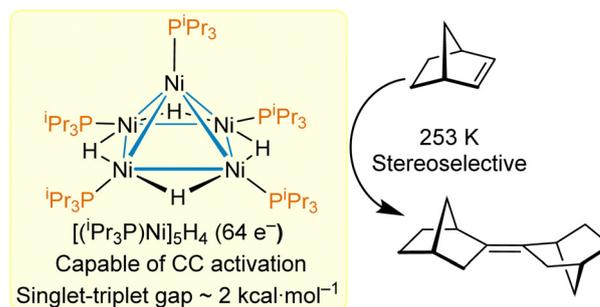


## COMMUNICATIONS

3542

### Breaking bonds and breaking rules: inert-bond activation by [(<sup>i</sup>Pr<sub>3</sub>P)Ni]<sub>5</sub>H<sub>4</sub> and catalytic stereospecific norbornene dimerization

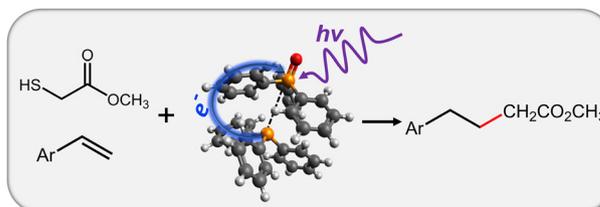
Junyang Liu, Manar M. Shoshani, Kethya Sum and Samuel A. Johnson\*



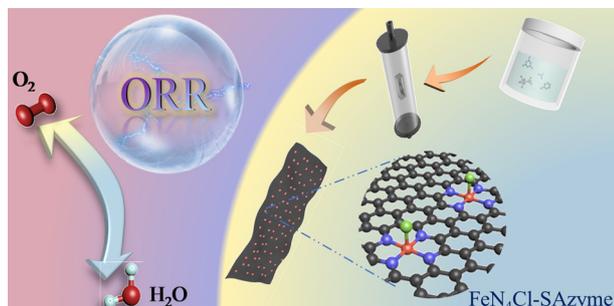
3546

### Triphenylphosphine oxide promoting visible-light-driven C–C coupling *via* desulfurization

Shea Stewart, Robert Maloney and Yugang Sun\*



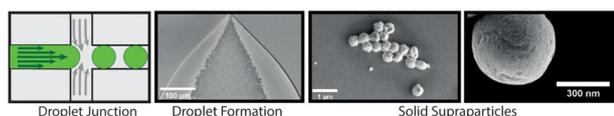
3550



### Axial optimization of biomimetic nanoenzyme catalysts applied to oxygen reduction reactions

Jingjing Liu, Jingjing Jia, Huiying Wen, Siqi Li, Yingjie Wu, Qi Wang, Ziwang Kan, Yan Li, Xia Wu, Jingxiang Zhao,\* Song Liu\* and Bin Li\*

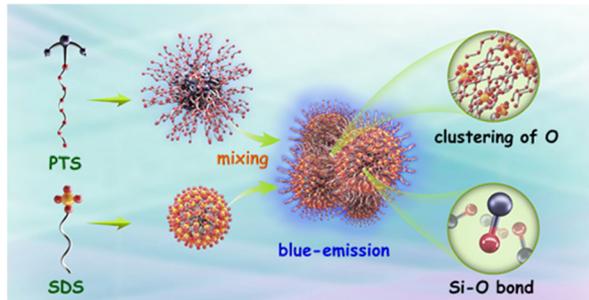
3554



### Microfluidic synthesis of monodisperse and size-tunable CsPbBr<sub>3</sub> supraparticles

Julia Nette, Federico Montanarella, Chenglian Zhu, Taras V. Sekh, Simon C. Boehme, Maryna I. Bodnarchuk, Gabriele Rainò, Philip D. Howes, Maksym V. Kovalenko and Andrew J. deMello\*

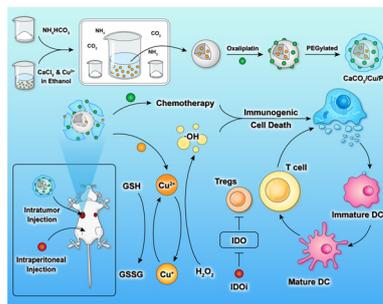
3558



### Clustering-enhanced, nonconventional photoluminescence from a silicone surfactant

Aoxue Xu, Hailong Liu, Gang Yi, Ning Feng and Hongguang Li\*

3562



### A CaCO<sub>3</sub>-based synergistic immunotherapy strategy for treating primary and distal tumors

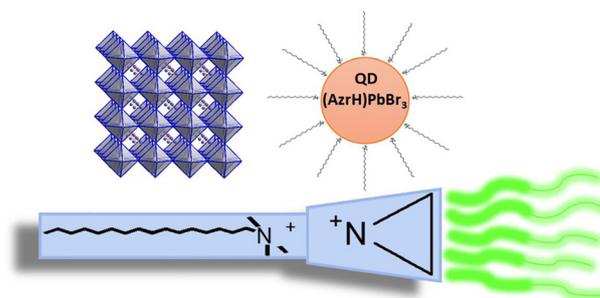
Kun Tang, Xia Zhang, Jiaqi Yin, Wei Pan, Yanhua Li,\* Na Li\* and Bo Tang\*



3566

### Quantum dots assembled from an aziridinium based hybrid perovskite displaying tunable luminescence

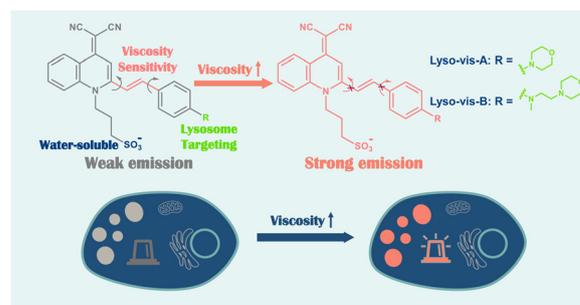
Oleksandr A. Semenikhin, Olesia I. Kucheriv, Liviu Sacarescu, Sergiu Shova and Il'ya A. Gural'skiy\*



3570

### Water-soluble fluorescent probes for differentiating cancer cells and normal cells by tracking lysosomal viscosity

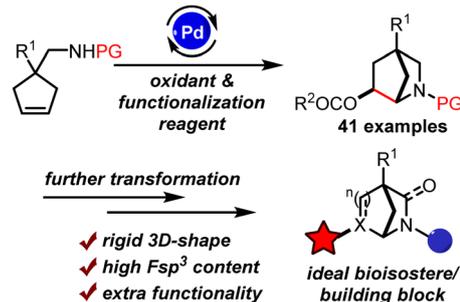
Minghui Liu, Jintao Weng, Shumei Huang, Wenjin Yin, Huatang Zhang,\* Yin Jiang,\* Liu Yang\* and Hongyan Sun\*



3574

### Construction of oxygenated 2-azabicyclo[2.2.1]heptanes via palladium-catalyzed 1,2-aminoacyloxylation of cyclopentenes

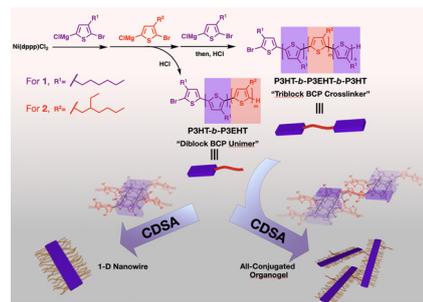
Haipin Zhou, Rui Pan, Menghua Xu, Jiao Ma, Aijun Lin\* and Hequan Yao\*



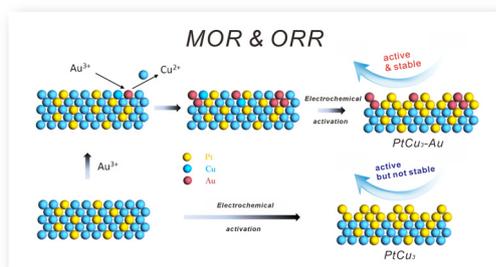
3578

### Semi-conductive micellar networks of all-conjugated diblock and triblock copolymer blends

Junyoung Kim, Wooyeol Chung, Dogyun Kim, Junwoo Kang, Carlos Fitzgerald Grandes Reyes, Jisu Jeong and Kyoung Taek Kim\*



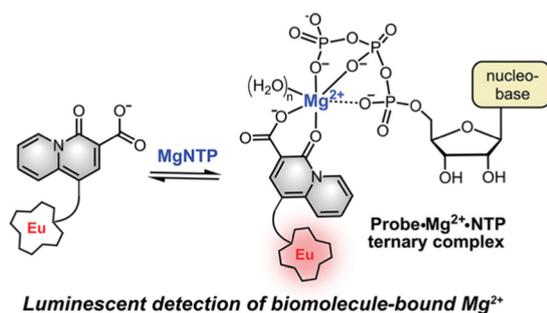
3582



### Au-modified PtCu nanodendrites as a highly stable and active electrocatalyst

Yuelin Gu, Weiyi Guo, Jingqi Bao, Yunxia Li and Linfang Lu\*

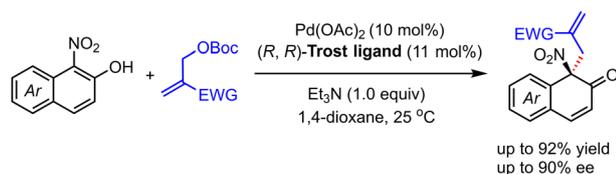
3586



### Lanthanide-based luminescent probes for biological magnesium: accessing polyphosphate-bound Mg<sup>2+</sup>

Brismar Pinto-Pacheco, Qitian Lin, Claudia W. Yan, Symara de Melo Silva and Daniela Buccella\*

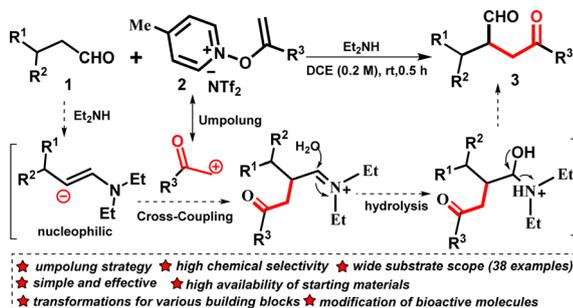
3590



### Pd-Catalyzed intermolecular asymmetric allylic dearomatization of 1-nitro-2-naphthols with MBH adducts

Qing-Xia Zhang, Jia-Hao Xie, Qing Gu and Shu-Li You\*

3594



### An umpolung strategy for chemically selective intermolecular cross-enolate-type coupling of *N*-alkenoxypyridinium salts with aldehydes

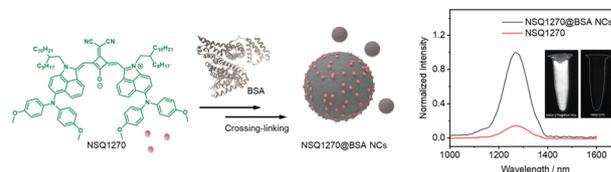
Guichao Dong, Mengfei Jiang, Nan Wu,\* Shengxiang Zhang, Huilong Zhu and Zhou Xu\*



3598

### Maximal emission beyond 1200 nm dicyanovinyl-functionalized squaraine for *in vivo* vascular imaging

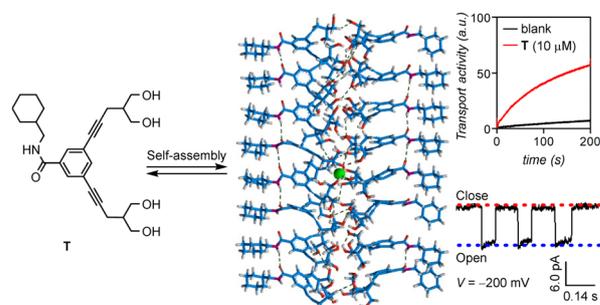
Yigang Wang, Mingda Wang, Guomin Xia,\* Yang Yang, Leilei Si, Hua Wang and Hongming Wang\*



3602

### Self-assembled anion channel formation by bis(1,3-propanediol)-linked *meta*-dipropynylbenzene-based small molecules

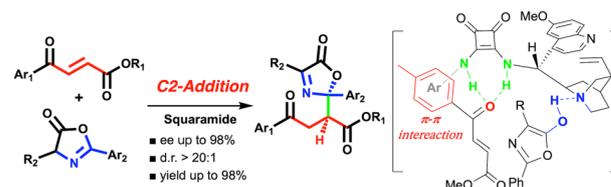
Rashmi Sharma, Amal Vijay, Sandip Chattopadhyay, Arnab Mukherjee\* and Pinaki Talukdar\*



3606

### Highly diastereo- and enantioselective C2 addition of 5*H*-oxazol-4-ones to $\gamma$ -keto- $\alpha,\beta$ -unsaturated esters

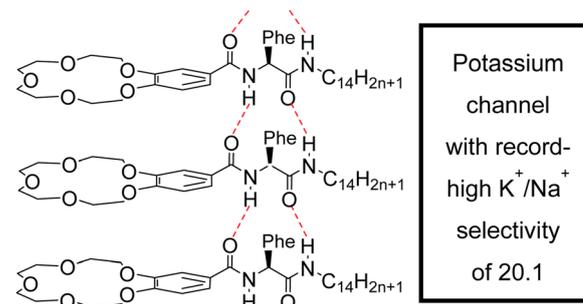
Li Lin,\* Mei Wang, Jiawei Zhou, Fei Li and Huiyun Liu



3610

### A K<sup>+</sup>-selective channel with a record-high K<sup>+</sup>/Na<sup>+</sup> selectivity of 20.1

Lei Jin, Chang Sun, Zhongyan Li, Jie Shen\* and Huaqiang Zeng\*



## CORRECTION

3614

**Correction: Masking thiol reactivity with thioamide, thiourea, and thiocarbamate-based MBPs**

Hyeonglim Seo, Alysia J. Kohlbrand, Ryjul W. Stokes, Jeewon Chung and Seth M. Cohen\*

