

# 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(77) 11445-11596 (2023)



### Cover

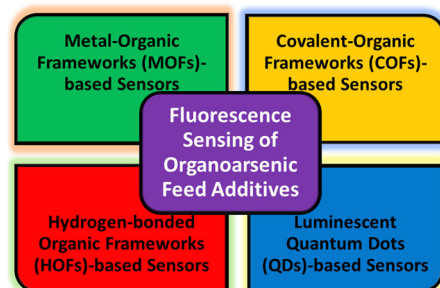
See Yi-Tsu Chan *et al.*,  
pp. 11500–11503.  
Image reproduced  
by permission of  
Yi-Tsu Chan from  
*Chem. Commun.*,  
2023, 59, 11500.

## HIGHLIGHT

11456

### Recent advances in fluorescence-based chemosensing of organoarsenic feed additives using luminescence MOFs, COFs, HOFs, and QDs

Rajdeep Mondal, Ananthu Shanmughan, A. Murugeswari\* and Sankarasekaran Shanmugaraju\*

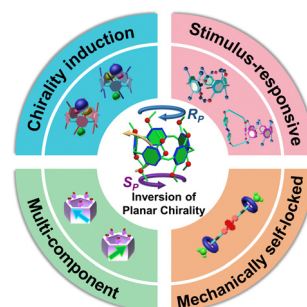


## FEATURE ARTICLES

11469

### Chiroptical regulation of macrocyclic arenes with flipping-induced inversion of planar chirality

Ting Zhao, Wanhua Wu\* and Cheng Yang\*



## Editorial Staff

### Executive Editor

Richard Kelly

### Deputy Editor

Harriet Riley

### Editorial Production Manager

Helen Saxton

### Development Editors

Danny Andrews, Ershad Abubacker

### Senior Publishing Editor

Becky Webb

### Publishing Editors

Kirstine Anderson, Matthew Bown, Laura Cooper, Hannah Fielding, Clare Fitzgerald, Anoushka Handa, Claire Harding, Alan Holder, Charlie Palmer, 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 0WE, 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

Davide Bonifazi, University of Vienna

Fengtao Fan, Chinese Academy of Sciences

Itaru Hamachi, Kyoto University

Michaele Hardie, University of Leeds

Kim Jelfs, Imperial College London

Chao-Jun Li, McGill University

David Lou, City University of Hong Kong

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., Massachusetts Institute of

Technology, USA

David Gonzalez-Rodriguez, Autonomous

University of Madrid

Rebecca Goss, University of

St Andrews

Mike Greaney, University of Manchester

Shaojun Guo, Peking University

Michaele 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 You, 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

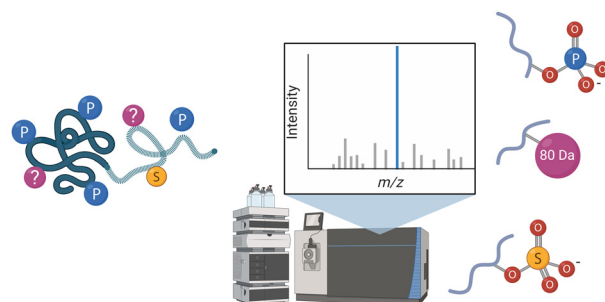


## FEATURE ARTICLES

11484

### Considerations for defining +80 Da mass shifts in mass spectrometry-based proteomics: phosphorylation and beyond

Leonard A. Daly, Christopher J. Clarke, Allen Po, Sally O. Oswald and Claire E. Eyers\*

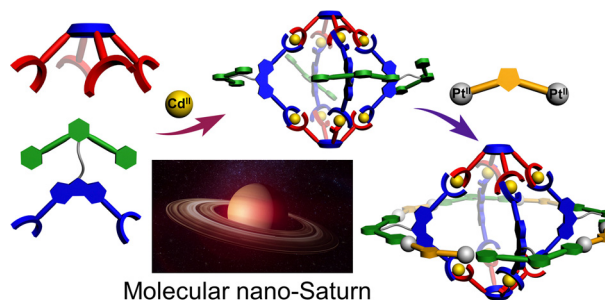


## COMMUNICATIONS

11500

### Sequential self-assembly of calix[4]resorcinarene-based heterobimetallic Cd<sub>8</sub>Pt<sub>8</sub> nano-Saturn complexes

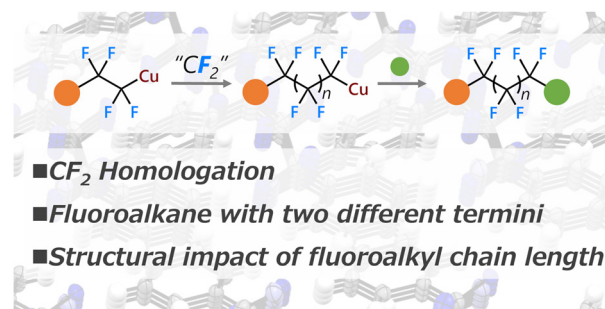
Lipeng He, Lijie Li, Shi-Cheng Wang and Yi-Tsu Chan\*



11504

### Difluoromethylene insertion into fluoroalkyl copper complexes

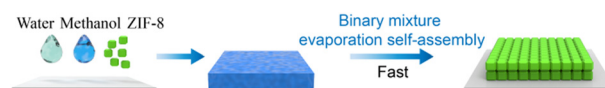
Yuyang Zhou, Ryohei Doi\* and Sensuke Ogoshi\*



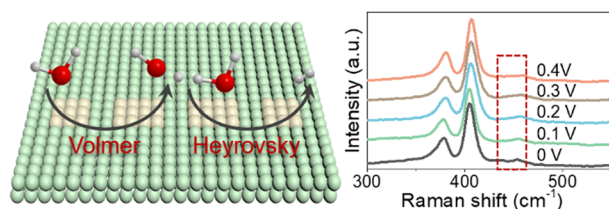
11508

### Methanol–water mixture evaporation-induced self-assembly of ZIF-8 particles

Jikun Yin, Haochen Ye, Xiaoli Xia, Lanhua Yi\* and Tie Wang\*



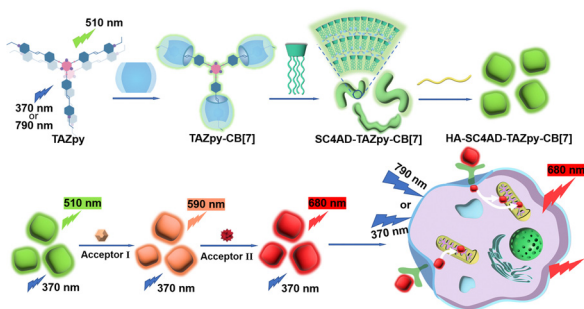
11512



### Coupling MoS<sub>2</sub> nanosheets with CeO<sub>2</sub> for efficient electrocatalytic hydrogen evolution at large current densities

Rui-Qing Li,\* Changming Wang, Shuixiang Xie, Tianyu Hang, Xiaoyu Wan, Jinjue Zeng\* and Wei Zhang\*

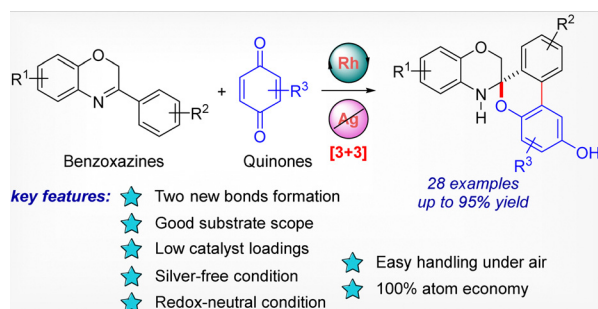
11516



### Triazine pyridinium derivative supramolecular cascade assembly extended FRET for two-photon NIR targeted cell imaging

Xuan Zhao, Xiaolu Zhou, Wen-Wen Xing and Yu Liu\*

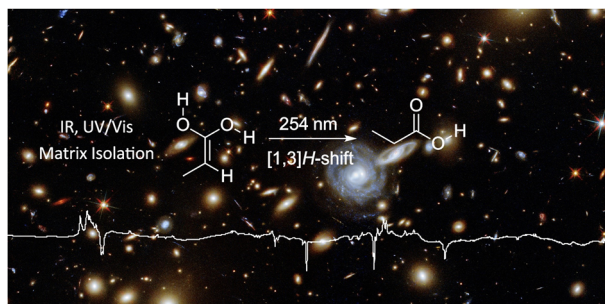
11520



### Rhodium(III)-catalyzed intermolecular [3+3] annulation of benzoxazines with quinone compounds: access to spiro-heterocyclic scaffolds

Qing-Yi Wei, Ze Zhou, Meng-Lian Yao, Ji-Kai Liu, Bin Wu and Jin-Ming Yang\*

11524



### The enol of propionic acid

Akkad Danho, Artur Mardyukov and Peter R. Schreiner\*

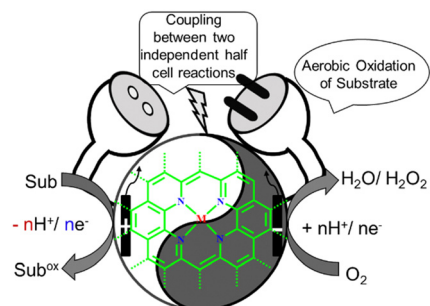


## COMMUNICATIONS

11528

### The synergy between electrochemical substrate oxidation and the oxygen reduction reaction to enable aerobic oxidation

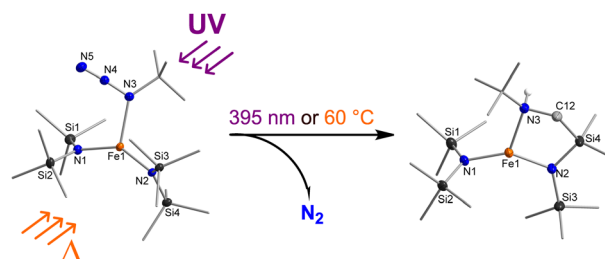
Snehanjali Behera, SK Tarik Aziz, Nisha Singla and Biswajit Mondal\*



11532

### A low-coordinate iron organoazide complex

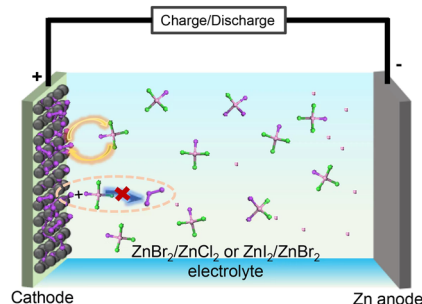
Andres Gonzalez, Serhiy Demeshko, Franc Meyer and C. Gunnar Werncke\*



11536

### Zinc-dual-halide complexes suppressing polyhalide formation for rechargeable aqueous zinc-halogen batteries

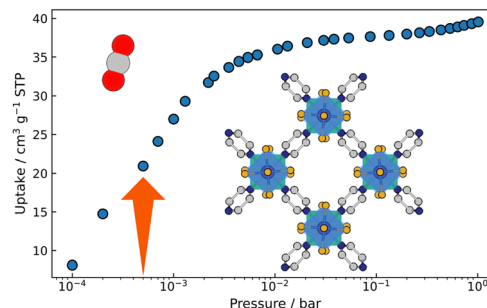
Wanlong Wu, Xiaoyu Yin, Sibao Wang, Quanwei Jiang, Hua-Yu Shi and Xiaoqi Sun\*



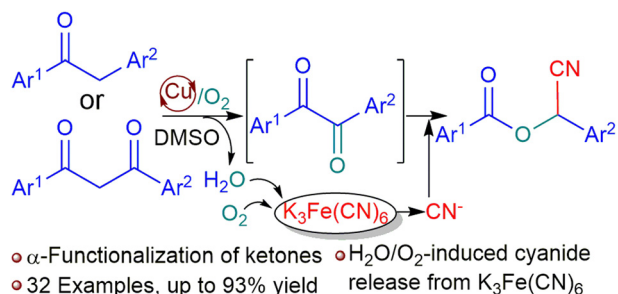
11540

### Enhanced CO<sub>2</sub> sorption properties in a polarizable [WO<sub>2</sub>F<sub>4</sub>]<sup>2-</sup>-pillared physisorbent under direct air capture conditions

Daniel O'Nolan, Lindsey Chatterton, Timothy Bellamy, J. Todd Ennis and Mustapha Soukri\*



11544

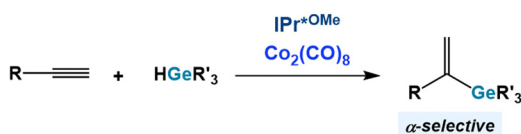


### Catalytic cascade synthesis of cyanohydrin esters via water/ $\text{O}_2$ -induced cyanide transfer from $\text{K}_3\text{Fe}(\text{CN})_6$

Anupam Kumar Singh, Shivani Singh Chauhan and Sukalyan Bhadra\*

11548

### BULKY NHC-COBALT CATALYST

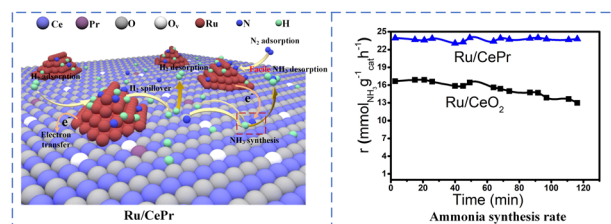


- Earth-abundant Co-catalyst
- Eco-friendly solvent
- High alpha-selectivity
- Broad substrate scope
- No harmful by-products
- 24 new products (yield up to 97%)

### Highly selective $\alpha$ -hydrogermylation of alkynes catalyzed by an *in situ* generated bulky NHC-cobalt complex

Małgorzata Bott,\* Aleksandra Mermela and Patrycja Żak

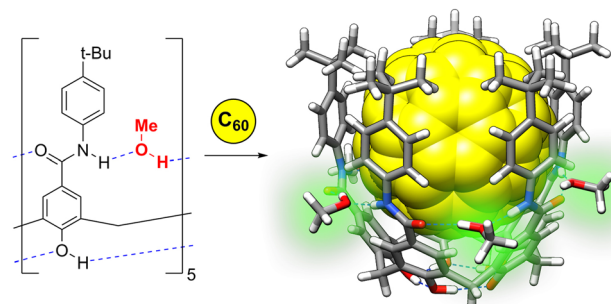
11552



### Boosting the ammonia synthesis activity of ceria-supported Ru catalysts achieved through trace Pr addition

Chunyan Li, Zecheng Zhang, Lingyun Zhou, Biyun Fang, Jun Ni, Jianxin Lin, Bingyu Lin\* and Lilong Jiang\*

11556



### Intermolecular hydrogen bonding in calix[5]arene derived cavitaands regulates the molecular recognition of fullerenes

Rubén Álvarez-Yebra, Alba Sors-Vendrell and Agustí Lledó\*

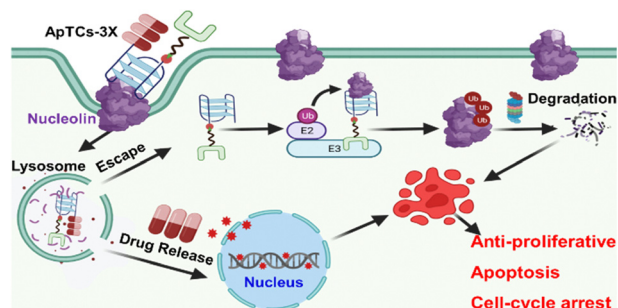


## COMMUNICATIONS

11560

### A cocktail therapeutic strategy based on clofarabine-containing aptamer-PROTAC for enhanced cancer therapy

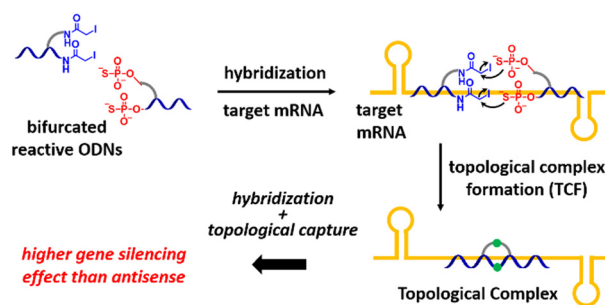
Zhenzhen Chen, Mohan Chen, Ran Liu, Huanhuan Fan\* and Jingjing Zhang\*



11564

### Topological capture of mRNA for silencing gene expression

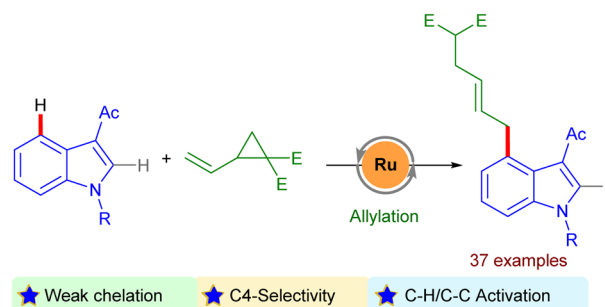
Fangjie Lyu, Takashi Tomita, Naoko Abe, Haruka Hiraoka, Fumitaka Hashiya, Yuko Nakashima, Shiryu Kajihara, Fumiaki Tomoike, Zhaoma Shu, Kazumitsu Onizuka, Yasuaki Kimura\* and Hiroshi Abe\*



11568

### A redox-neutral weak carbonyl chelation assisted C4–H allylation of indoles with vinylcyclopropanes

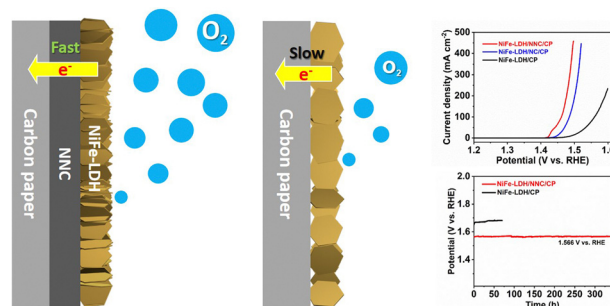
Shubhajit Basak, Tripti Paul and Tharmalingam Punniyamurthy\*



11572

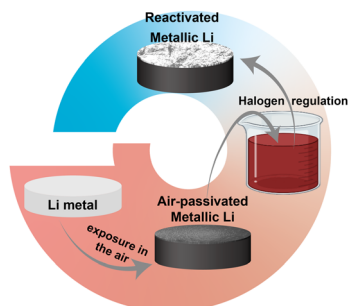
### Amazing enhancement of OER performances: creating a well-designed functional Ni and N-doped carbon layer as a support material for fabricating a NiFe-LDH electrocatalyst

Yu Wei, Zhenze Han, Taolue Liu, Xin Ding\* and Yan Gao\*



## COMMUNICATIONS

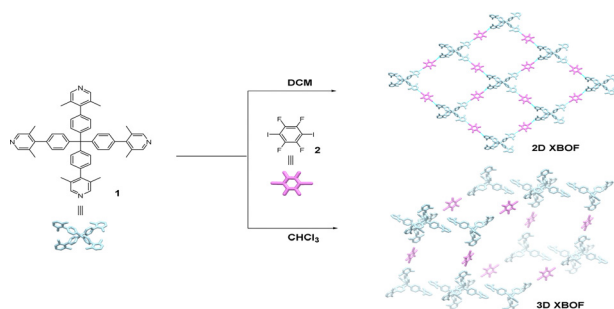
11576



### Reactivation of an air-passivated lithium metal anode through halogen regulation

Yiqing Yao, Hui Gu, Jiahang Zou, Hanxu Yang, Qingan Zhang, Zhipeng Jiang\* and Yongtao Li\*

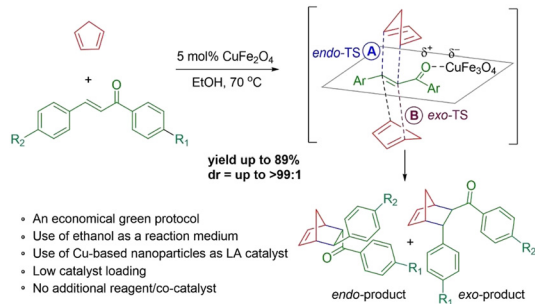
11580



### Two and three-dimensional halogen-bonded frameworks: self-assembly influenced by crystallization solvents

Chuan-Zhi Liu,\* Jing-Jing Wang, Bo Yang, Zhong-Yi Li, Meng Yan, Xin-Ming Liu, Zhi-Yuan Hu,\* Lan-Tao Liu and Zhan-Ting Li\*

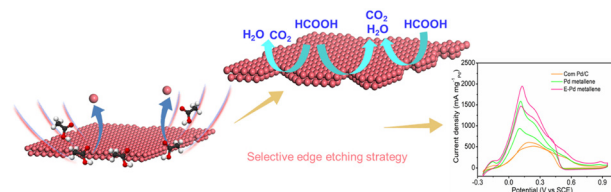
11584



### Copper ferrite nanoparticles catalyzed the challenging Diels–Alder reaction of aromatic chalcones with cyclopentadiene

Divya Tagra, Meha Bhargava and Jyoti Agarwal\*

11588



### Selective edge etching of Pd metallene for enhanced formic acid electrooxidation

Ze Liu,\* Xiaohang Ge, Yanrui Wang, Mang Niu, Weiyong Yuan and Lian Ying Zhang\*



## CORRECTIONS

11592

**Correction: Stannyl phosphaketene as a synthon for phosphorus analogues of  $\beta$ -lactams**

Yong-an Luo, Zhao Zhao, Ting Chen, Yanguo Li, Yufen Zhao, Douglas W. Stephan\* and Yile Wu\*

11593

**Correction: Cyclopentane FIT-PNAs: bright RNA sensors**

Odelia Tepper,\* Hongchao Zheng, Daniel H. Appella\* and Eylon Yavin\*

