## 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(57) 8749-8868 (2023)



#### Cover

See Krzysztof Woźniak, Mihails Arhangelskis et al., pp. 8799-8802. Image reproduced by permission of Damian Trzybiński from Chem. Commun., 2023, 59, 8799.



#### Inside cover

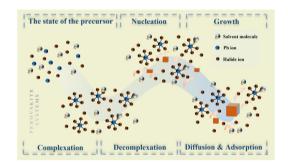
See Yanan Tang, Feng Li et al., pp. 8803-8805. Image reproduced by permission of Feng Li from Chem. Commun., 2023, 59, 8803.

#### **HIGHLIGHT**

8758

#### Growth mechanism of metal halide perovskite single crystals in solution

Mingquan Liao, Mengling Xia,\* Yinsheng Xu, Ping Lu and Guangda Niu\*

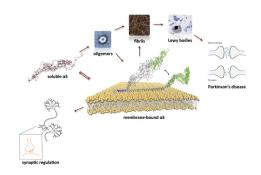


#### **FEATURE ARTICLES**

8769

#### α-Synuclein and biological membranes: the danger of loving too much

Silvia Mansueto, Giuliana Fusco\* and Alfonso De Simone\*



#### **Editorial Staff**

Executive Editor

Richard Kelly

**Deputy Editor** 

Harriet Riley

**Editorial Production Manager** Helen Saxton

Development Editors

Danny Andrews, Ershad Abubacker

**Senior Publishing Editor** 

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

Iade Holliday

Publishing Assistant

Natalie Ford

Publisher

For queries about submitted papers, please contact Helen Saxton, Editorial Production Manager in the first

For pre-submission queries please contact Richard Kelly, Executive Editor. Email 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 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: £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

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

## ChemComm

Chemical Communications

#### rsc.li/chemcomm

#### **Editorial Board**

Chair

Douglas Stephan, University of Toronto

Associate Editors

Lutz Ackermann, University of Göttingen Davide Bonifazi. University of Vienna Rachel Caruso, RMIT University

Fengtao Fan, Chinese Academy of Sciences Itaru Hamachi, Kvoto 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

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 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 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

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 Zvsman-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:

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.

 $\ensuremath{\boldsymbol{\otimes}}$  The paper used in this publication meets the requirements of ANSI/NISO Z39.48-1992 (Permanence of Paper).

Registered charity number: 207890

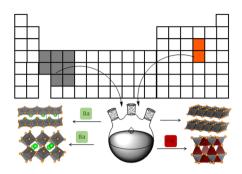


#### FEATURE ARTICLES

#### 8779

#### Solution-phase synthesis of group 3-5 transition metal chalcogenide inorganic nanomaterials

Daniel Zilevu and Sidney E. Creutz\*

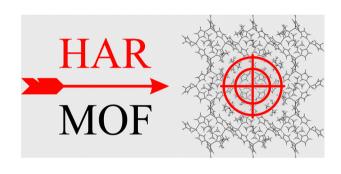


#### COMMUNICATIONS

#### 8799

Hirshfeld atom refinement of metal-organic frameworks for accurate positioning of hydrogen atoms and disorder analysis

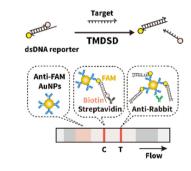
Yizhi Xu, Michał L. Chodkiewicz, Magdalena Woińska, Damian Trzybiński, Ivana Brekalo, Filip Topić, Krzysztof Woźniak\* and Mihails Arhangelskis\*



#### 8803

Enabling a universal lateral flow readout for DNA strand displacement via disassembling chemical

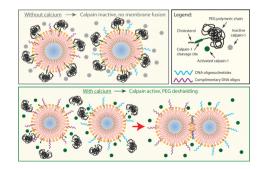
Wanting Peng, Yun Tan, Chenlan Shen, Yanan Tang\* and Feng Li\*



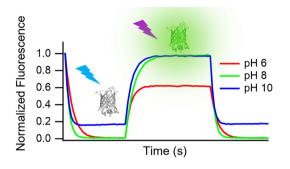
#### 8806

#### Calcium-triggered DNA-mediated membrane fusion in synthetic cells

Yen-Yu Hsu, Samuel J. Chen, Julio Bernal-Chanchavac, Bineet Sharma, Hossein Moghimianavval, Nicholas Stephanopoulos and Allen P. Liu\*



#### 8810



#### Quantitative determination of the full switching cycle of photochromic fluorescent proteins

Anaïs C. Bourges, Benjamien Moeyaert, Thi Yen Hang Bui, Franziska Bierbuesse, Wim Vandenberg and Peter Dedecker\*

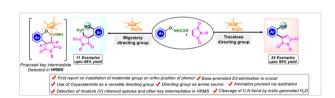
#### 8814



#### Development of multifunctional ionogels derived from a dynamic deep eutectic solvent

Jintao Li, Mingzu Zhang, Jinlin He\* and Peihong Ni

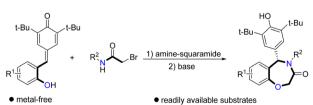
#### 8818



### Carboamination and olefination: ortho C-H functionalization of phenoxyacetamide

Tanmayee Nanda, Shubham Kumar Dhal, Gopal Krushna Das Adhikari, Namrata Prusty and Ponneri C. Ravikumar\*

#### 8822



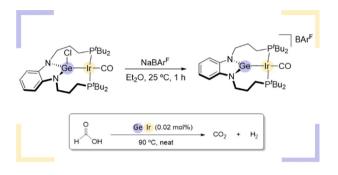
• high yield and enantioselectivity • rapid access to chiral 1,4-benzoxazepines Metal-free and enantioselective synthesis of 1,4-benzoxazepines from para-quinone methide derivatives and  $\alpha$ -bromohydroxamates

Suo-Suo Qi, Xin Luo, Xiao-Ping Sun, Jing-Jing Zhai, Ming-Ming Chu,\* Jin Chen,\* Yi-Feng Wang\* and Dan-Qian Xu\*

#### 8826

## A genuine germylene PGeP pincer ligand for formic acid dehydrogenation with iridium

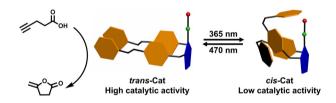
Marta Fernández-Buenestado, Rosie J. Somerville, Joaquín López-Serrano\* and Jesús Campos\*



#### 8830

## A photoresponsive gold catalyst based on azobenzene-functionalized NHC ligands

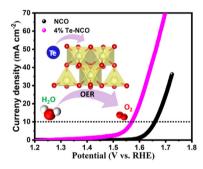
Jianghua Liu, Eduard O. Bobylev, Bas de Bruin and Joost N. H. Reek\*



#### 8834

#### Tellurium-induced defect engineering for boosting the oxygen evolution reaction of spinel oxide

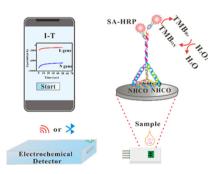
Shu-Fang Li,\* Xin Li and Dong Yan\*



#### 8838

# A DNA framework-based dual signal amplification biosensor for portable detection of SARS-CoV-2 and its mutations

Yanzhi Dou, ZiYue Huang, Tie Li, Nokuzola Maboyi, Xianting Ding, Shiping Song\* and Jing Su\*

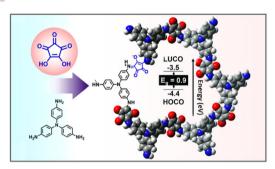


#### 8842

# Regiodivergent C-H Alkenylation

#### Catalyst-controlled regiodivergent C-H bond alkenylation of 2-pyridylthiophenes

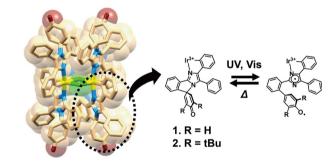
Qiang Zhang, Pengfei Zhou, Yaokun Zhao, Yeran Liu, Taoyuan Liang, Jun Jiang\* and Zhuan Zhang\*



#### A croconic acid-derived narrow band gap conjugated microporous polymer

S. Enoch, Atul B. Nipate, Vellanki Lakshmi\* and Rajeswara Rao Malakalapalli\*

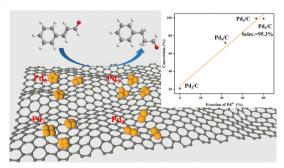
#### 8850



#### Photochromic dinuclear iridium(III) complexes having phenoxyl-imidazolyl radical complex derivatives

Yoshinori Okayasu, Takuya Miyahara, Rintaro Shimada, Yuki Nagai, Akira Sakamoto, Jiro Abe\* and Yoichi Kobayashi\*

#### 8854



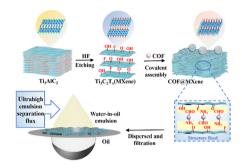
## Electronic structure modulation of $Pd_n$ (n = 2-5) nanoclusters in the hydrogenation of cinnamaldehyde

Jie Tang, Tingting Ge, Wenxuan Wang, Chao Liu\* and Jiahui Huang\*

#### 8858

#### A robust COF@MXene membrane for ultra-high flux of water-in-oil emulsion separation

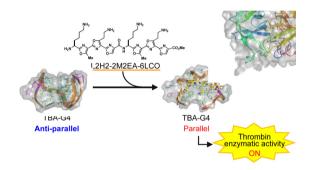
Jing Wang, Xianggian Xu, Yujian Zhou, Wen Ma, Fushan Wang, Yongjun Zhou and Xuehu Men\*



#### 8862

#### Regulation of thrombin activity by ligand-induced topological alteration in a thrombin-binding aptamer

Shogo Sasaki, Yue Ma, Takatsugu Hirokawa, Kazunori Ikebukuro, Masayuki Tera\* and Kazuo Nagasawa\*



#### **CORRECTION**

#### 8866

#### Correction: Pyrrolopyrrole aza-BODIPY near-infrared photosensitizer for dual-mode imaging-guided photothermal cancer therapy

Chaolong Wu, Xiaoyu Huang, Yunyun Tang, Wanyue Xiao, Liguo Sun,\* Jinjun Shao\* and Xiaochen Dong\*