

# Chemical Science

rsc.li/chemical-science

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 2041-6539 CODEN CSHCBM 15(8) 2671–3034 (2024)



**Cover**  
See Otto Dopfer, Shun-ichi Ishiuchi, Masaaki Fujii et al., pp. 2725–2730. Image reproduced by permission of Masaaki Fujii from *Chem. Sci.*, 2024, 15, 2725.



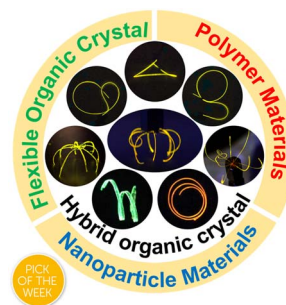
**Inside cover**  
See Jeremiah J. Gassensmith et al., pp. 2731–2744. Image reproduced by permission of Ryanne Ehrman from *Chem. Sci.*, 2024, 15, 2731.

## PERSPECTIVES

2684

### Hybrid and composite materials of organic crystals

Xuesong Yang, Marieh B. Al-Handawi, Liang Li, Panče Naumov\* and Hongyu Zhang\*



2697

### Construction of nanoparticle-on-mirror nanocavities and their applications in plasmon-enhanced spectroscopy

Wei Peng, Jing-Wen Zhou, Mu-Lin Li, Lan Sun, Yue-Jiao Zhang\* and Jian-Feng Li\*



# RSC Applied Interfaces

GOLD  
OPEN  
ACCESS

Interfacial and surface research  
with an applied focus

Interdisciplinary and open access

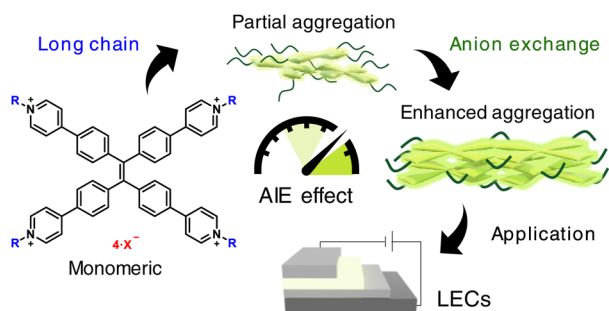
[rsc.li/RSCApplInter](https://rsc.li/RSCApplInter)

Fundamental questions  
Elemental answers





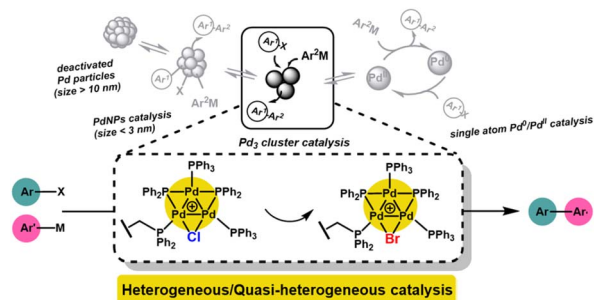
2755



### Controlling aggregation-induced emission by supramolecular interactions and colloidal stability in ionic emitters for light-emitting electrochemical cells

Alba Sanz-Velasco, Olivia Amargós-Reyes, Aya Kähäri, Sophia Lipinski, Luca M. Cavinato, Rubén D. Costa,\* Mauri A. Kostianen and Eduardo Anaya-Plaza\*

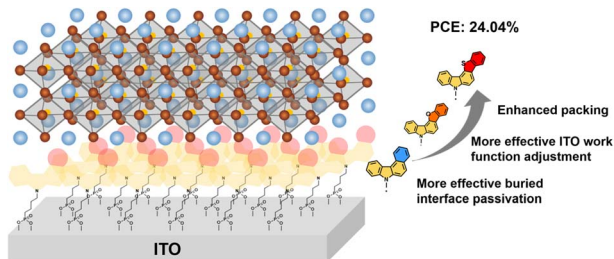
2763



### Evidence for Suzuki–Miyaura cross-couplings catalyzed by ligated Pd<sub>3</sub>-clusters: from cradle to grave

Neda Jeddi, Neil W. J. Scott, Theo Tanner, Simon K. Beaumont\* and Ian J. S. Fairlamb\*

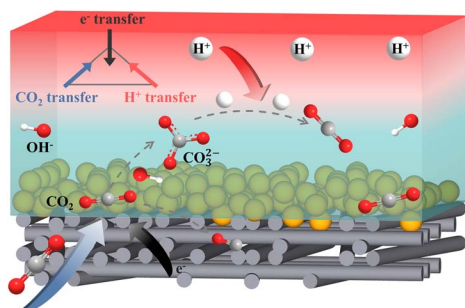
2778



### Rational molecular design of multifunctional self-assembled monolayers for efficient hole selection and buried interface passivation in inverted perovskite solar cells

Wenlin Jiang, Ming Liu, Yanxun Li, Francis R. Lin and Alex K.-Y. Jen\*

2786



### Unravelling the carbonate issue through the regulation of mass transport and charge transfer in mild acid

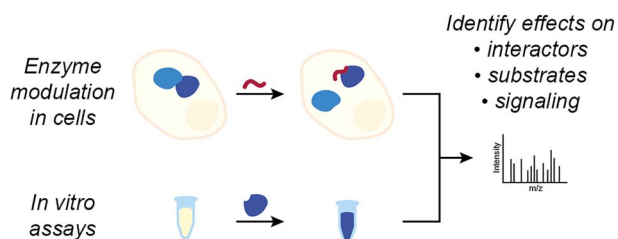
Zhongshuo Zhang, Qian Lu, Jiping Sun, Guangchao Li, Weixing Wu, Zhanyou Xu, Liangfang Xu and Ying Wang\*



2792

### A strategy to disentangle direct and indirect effects on (de)phosphorylation by chemical modulators of the phosphatase PP1 in complex cellular contexts

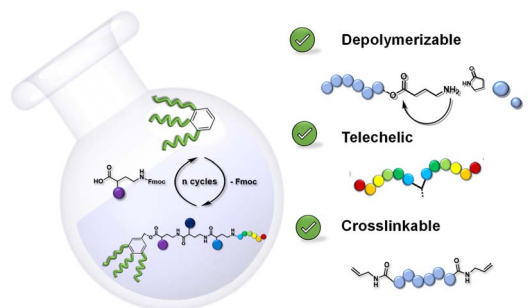
Bernhard Hoermann, Eva-Maria Dürr, Christina Ludwig, Melda Ercan and Maja Köhn\*



2805

### Telechelic sequence-defined oligoamides: their step-economical synthesis, depolymerization and use in polymer networks

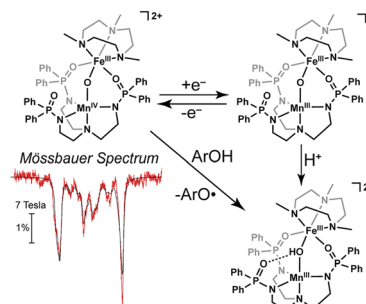
Irene De Franceschi, Nezha Badi\* and Filip E. Du Prez\*



2817

### Accessing a synthetic Fe<sup>III</sup>Mn<sup>IV</sup> core to model biological heterobimetallic active sites

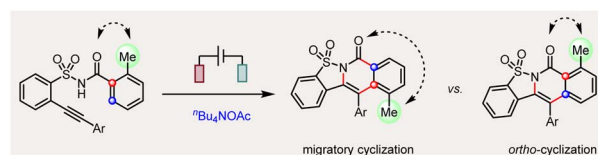
Justin L. Lee, Saborni Biswas, Joseph W. Ziller, Emile L. Bominaar, Michael P. Hendrich and A. S. Borovik\*



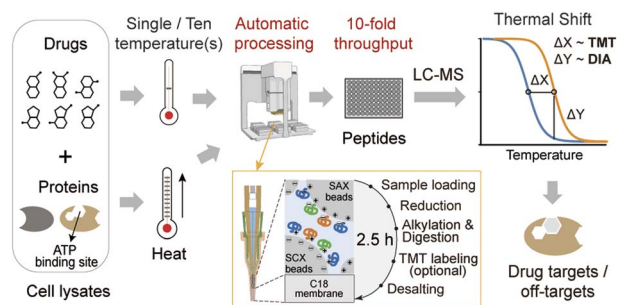
2827

### Electrochemical cascade migratory versus ortho-cyclization of 2-alkynylbenzenesulfonamides

Zhaojiang Shi, Shicheng Dong, Ting Liu, Wei-Zhen Wang, Nan Li, Yaofeng Yuan, Jun Zhu\* and Ke-Yin Ye\*



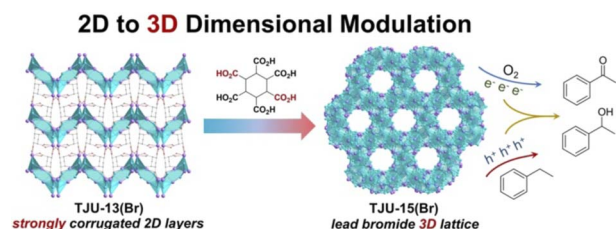
2833



### High-throughput drug target discovery using a fully automated proteomics sample preparation platform

Qiong Wu, Jiangnan Zheng, Xintong Sui, Changying Fu, Xiaozhen Cui, Bin Liao, Hongchao Ji, Yang Luo, An He, Xue Lu, Xinyue Xue, Chris Soon Heng Tan\* and Ruijun Tian\*

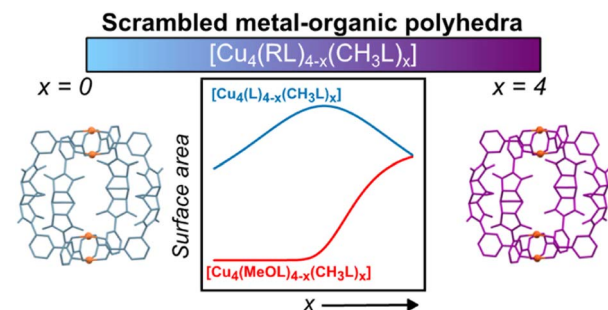
2848



### Promoting the formation of metal–carboxylate coordination to modulate the dimensionality of ultrastable lead halide hybrids

Yilin Jiang, Jinlin Yin, Ruonan Xi and Honghan Fei\*

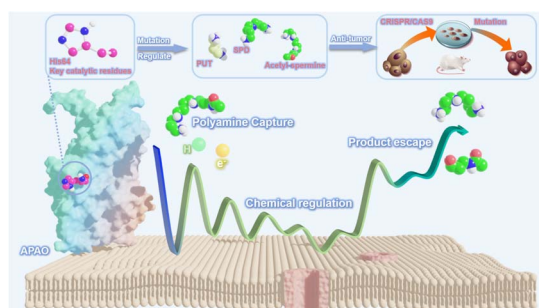
2857



### Improving the gas sorption capacity in lantern-type metal–organic polyhedra by a scrambled cage method

Beatriz Doñagueda Suso, Zaoming Wang, Alan R. Kennedy, Ashleigh J. Fletcher, Shuhei Furukawa and Gavin A. Craig\*

2867



### Enzymatic-related network of catalysis, polyamine, and tumors for acetylpolyamine oxidase: from calculation to experiment

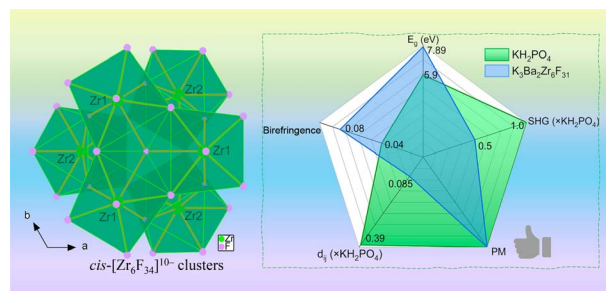
Dong Fang, Zhiyang Zhang, Jihang Zhai, Baolin Guo, Pengfei Li, Xiaoyuan Liu, Jinshuai Song, Songqiang Xie, Ruibo Wu, Yuan Zhao\* and Chaojie Wang\*



2883

### Exploring a new short-wavelength nonlinear optical fluoride material featuring unprecedented polar *cis*-[Zr<sub>6</sub>F<sub>34</sub>]<sup>10-</sup> clusters

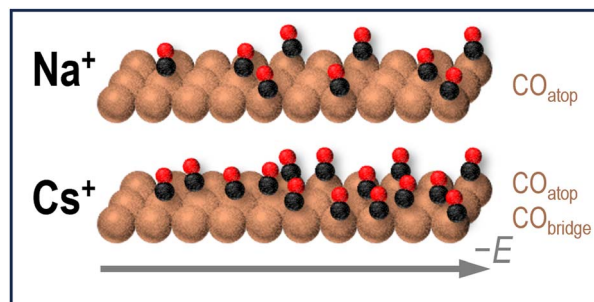
Mei Yan, Ru-Ling Tang,<sup>\*</sup> Wen-Dong Yao, Wenlong Liu and Sheng-Ping Guo<sup>\*</sup>



2889

### Studying the cation dependence of CO<sub>2</sub> reduction intermediates at Cu by *in situ* VSG spectroscopy

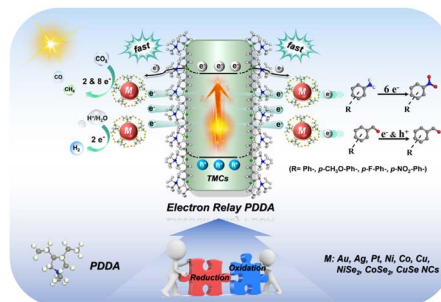
Liam C. Banerji, Hansaem Jang, Adrian M. Gardner and Alexander J. Cowan<sup>\*</sup>



2898

### Customizing precise, tunable, and universal cascade charge transfer chains towards versatile photoredox catalysis

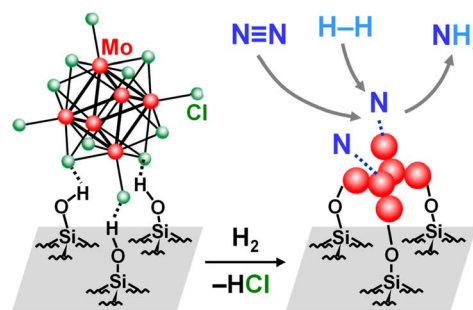
Xian Yan, Jun-Hao Dong, Jing-Ying Zheng, Yue Wu and Fang-Xing Xiao<sup>\*</sup>



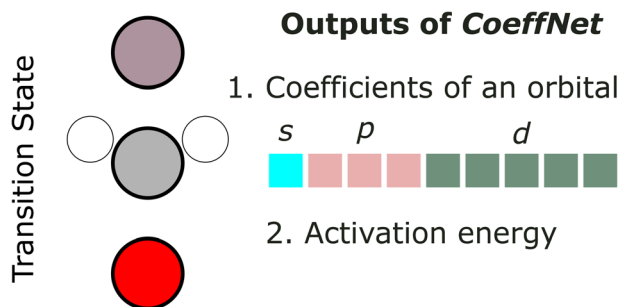
2914

### Catalytic ammonia synthesis on HY-zeolite-supported angstrom-size molybdenum cluster

Satoshi Kamiguchi,<sup>\*</sup> Kiyotaka Asakura, Tamaki Shibayama, Tomoko Yokaichiya, Tatsushi Ikeda, Akira Nakayama,<sup>\*</sup> Ken-ichi Shimizu and Zhaomin Hou



2923



### CoeffNet: predicting activation barriers through a chemically-interpretable, equivariant and physically constrained graph neural network

Sudarshan Vijay, Maxwell C. Venetos, Evan Walter Clark Spotte-Smith, Aaron D. Kaplan, Mingjian Wen and Kristin A. Persson\*

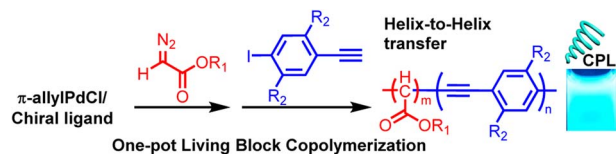
2937



### Late-stage *gem*-difluoroallylation of phenol in bioactive molecules and peptides with 3,3-difluoroallyl sulfonium salts

Minqi Zhou, Jin-Xiu Ren, Xiao-Tian Feng, Hai-Yang Zhao, Xia-Ping Fu, Qiao-Qiao Min and Xingang Zhang\*

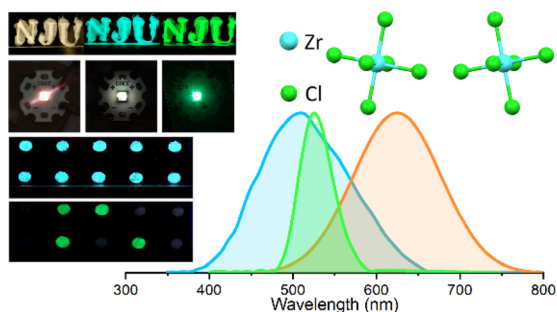
2946



### One-pot asymmetric living copolymerization-induced chiral self-assemblies and circularly polarized luminescence

Run-Tan Gao, Shi-Yi Li, Bing-Hao Liu, Zheng Chen, Na Liu,\* Li Zhou and Zong-Quan Wu\*

2954



### RGB tri-luminescence in organic–inorganic zirconium halide perovskites

Chuying Wang, Wen Meng, Guigen Luo, Guangyong Xu, Min Peng, Bin Xu, Shuming Nie and Zhengtao Deng\*

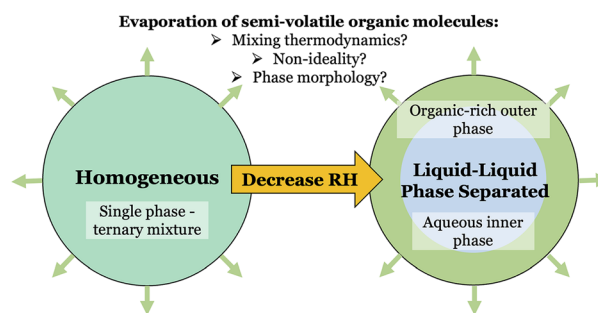




2963

### Probing the evaporation dynamics of semi-volatile organic compounds to reveal the thermodynamics of liquid–liquid phase separated aerosol

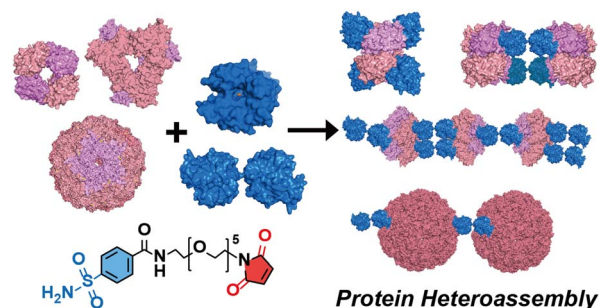
Jack M. Choczynski, Bilal Shokoor, Jorge Salazar, Andreas Zuend and James F. Davies\*



2975

### Programming interchangeable and reversible heterooligomeric protein self-assembly using a bifunctional ligand

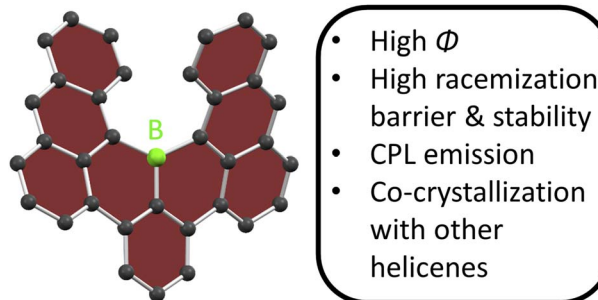
Soyeun Son and Woon Ju Song\*



2984

### A highly fluorescent bora[6]helicene exhibiting circularly polarized light emission

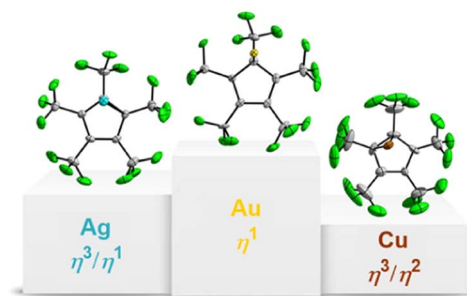
Matthias Schnitzlein, Kazutaka Shoyama and Frank Würthner\*



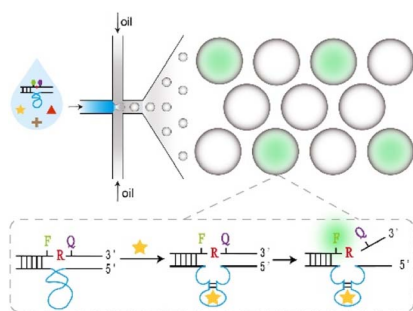
2990

### Synthesis and structural characterization of stable coinage metal (Cu, Ag, Au) cyclopentadienyl complexes

Robin Sievers, Marc Reimann, Nico G. Kub, Susanne M. Rupf, Martin Kaupp and Moritz Malischewski\*



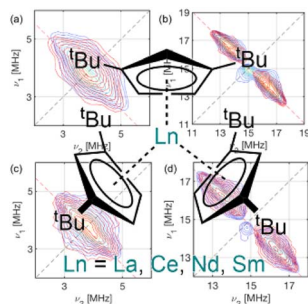
2996



### A DNAzymes-in-droplets assay for *Burkholderia gladioli pathovar cocovenenans* with single-bacterium sensitivity

Xiaoqian Li, Yangyang Chang, Yunping Wu and Meng Liu\*

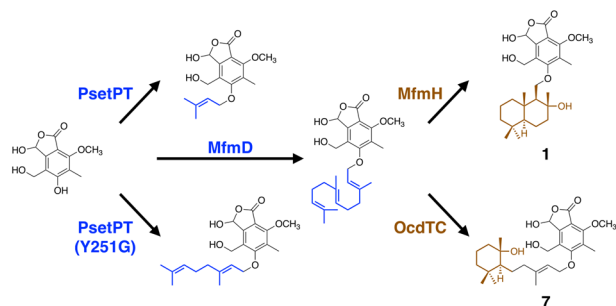
3003



### Metal-carbon bonding in early lanthanide substituted cyclopentadienyl complexes probed by pulsed EPR spectroscopy

Lydia E. Nodaraki, Jingjing Liu, Ana-Maria Ariciu, Fabrizio Ortu, Meagan S. Oakley, Letitia Birnoschi, Gemma K. Gransbury, Philip J. Cobb, Jack Emerson-King, Nicholas F. Chilton,\* David P. Mills,\* Eric J. L. McInnes\* and Floriana Tuna\*

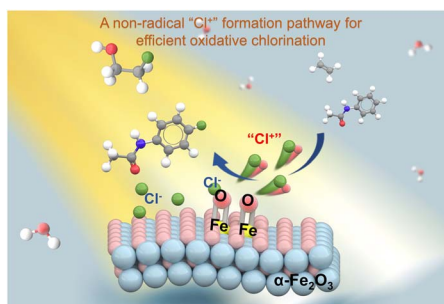
3011



### Global genome mining-driven discovery of an unusual biosynthetic logic for fungal polyketide-terpenoid hybrids

Dexiu Yan and Yudai Matsuda\*

3018



### A controlled non-radical chlorine activation pathway on hematite photoanodes for efficient oxidative chlorination reactions

Daojian Tang, Lei Wu, Liubo Li, Niankai Fu, Chuncheng Chen, Yuchao Zhang\* and Jincui Zhao



3028

 **$^{109}\text{Ag}$  NMR chemical shift as a descriptor for Brønsted acidity from molecules to materials**

Colin Hansen, Scott R. Docherty, Weicheng Cao, Alexander V. Yakimov and Christophe Copéret\*

