

# Chemical Science

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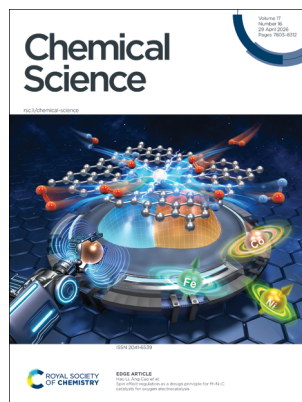
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## IN THIS ISSUE

ISSN 2041-6539 CODEN CSHCBM 17(16) 7803–8312 (2026)



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See Tibor Szilvási, Terrance J. Hadlington *et al.*, pp. 7938–7946. Image reproduced by permission of Terrance J. Hadlington from *Chem. Sci.*, 2026, 17, 7938.



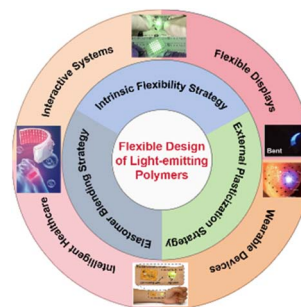
**Inside cover**  
See Hao Li, Ang Cao *et al.*, pp. 7947–7957. Image reproduced by permission of Hao Li from *Chem. Sci.*, 2026, 17, 7947.

## PERSPECTIVE

7817

### Light-emitting polymer semiconductors in flexible electronics: strategies, challenges and future perspective

Xiang An,\* Wenyu Chen, Zhiyang Sun, Hong Ren, Xiao Luan, Shigang He, Man Xu, Jinyi Lin\* and Wei Huang\*

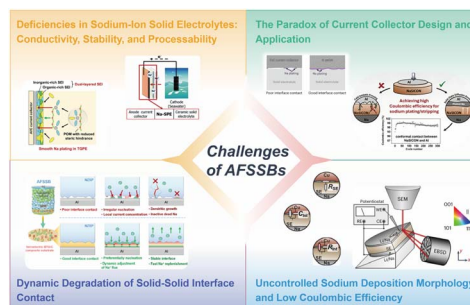


## REVIEWS

7827

### Anode-free solid-state sodium batteries: navigating the challenges toward high energy density

Yi-An Zhao, Ge Sun, Heng Jiang,\* Zhixuan Wei\* and Fei Du\*



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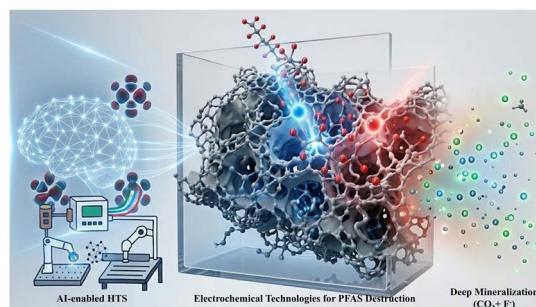
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## REVIEWS

7843

## Advances in electrochemical technologies for PFAS destruction

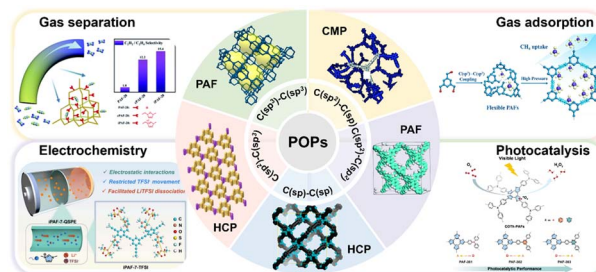
Yuqing Dong, Shuaiyu Gao, Yuelin Zhao, Genban Sun\* and Jihong Yu\*



7875

## Porous organic polymers based on carbon-carbon coupling reaction: synthesis and applications

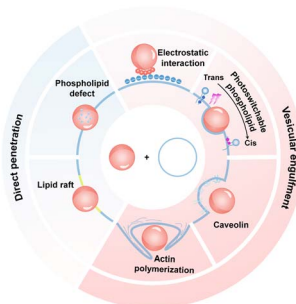
Yifan Li, Jingyuan Zhao, Dongtao Liu\* and Guangshan Zhu\*



7925

## Decoding the tactics for coacervate pedestrian crossing the phospholipid membrane

Huimin Yang, Minghao Wei and Yan Qiao\*

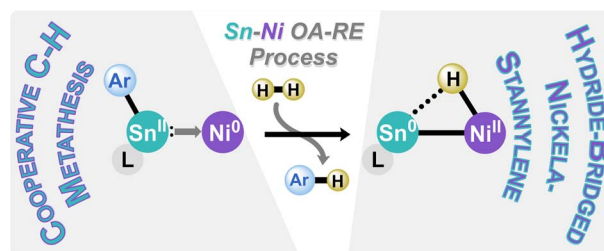


## EDGE ARTICLES

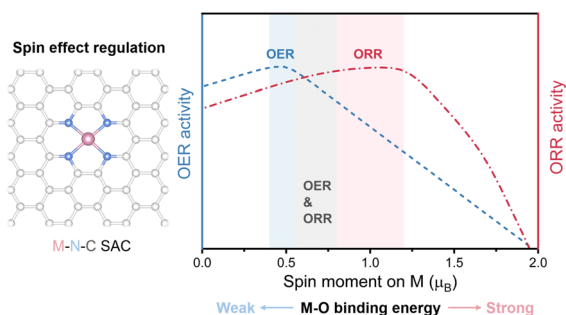
7938

Cooperative metathesis of H-H/Sn-C<sup>Ar</sup> bonds in stannylene-Ni<sup>0</sup> systems

Jonas M. Gilch, Philip M. Keil, Mustapha Iddrisu, Tibor Szilvási\* and Terrance J. Hadlington\*



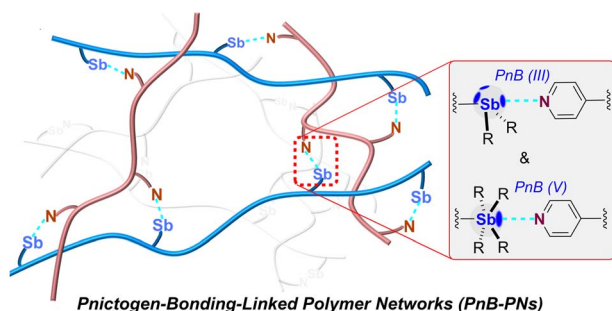
7947



### Spin effect regulation as a design principle for M–N–C catalysts for oxygen electrocatalysis

Haiyan Li, Zhanzhao Fu, Yuan Yuan, Di Zhang, Yubo Chen, Hao Li\* and Ang Cao\*

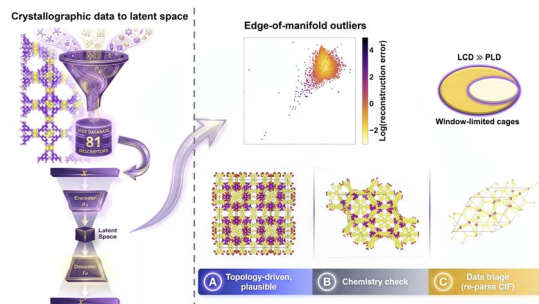
7958



### Pnictogen-bonding-crosslinked polymer networks: constructing self-healing materials

Qingli Song, Yi Liu, Yao Wang\* and Wei Wang\*

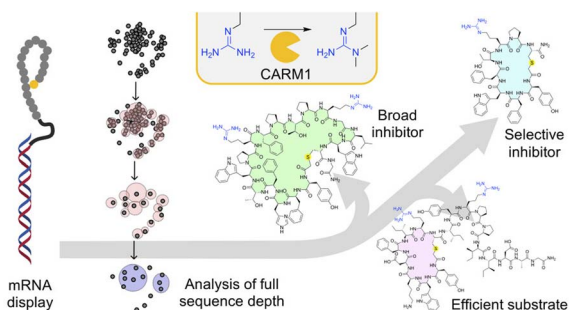
7967



### Decoding the unseen: unsupervised anomaly detection in metal–organic frameworks for discovery beyond the norm

Hosein Alimardani, Shayan Abaei and Mehrdad Asgari\*

7986



### A suite of macrocyclic peptide inhibitors and substrate probes for arginine methyltransferases

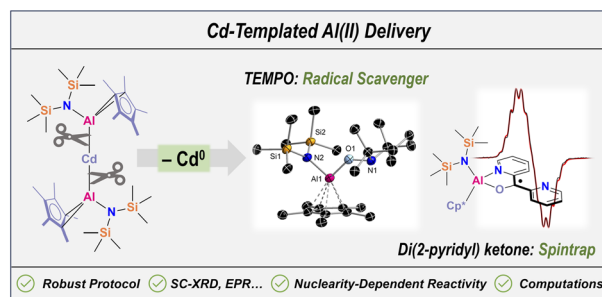
R. Yoshisada, Y. Zhang, E. Janssen, C. Bouchard, D. A. Poole, III, T. Wan, L. R. Soares, I. M. Houtkamp, S. Abeln, H. Mouhib, M. J. van Haren, N. Marechal, N. Troffer-Charlier, V. Cura, J. Cavarelli, H. van Ingen, U. M. Bauer, N. I. Martin and S. A. K. Jongkees\*



7997

## Al(III) transfer harnessing a well-defined cadmium precursor

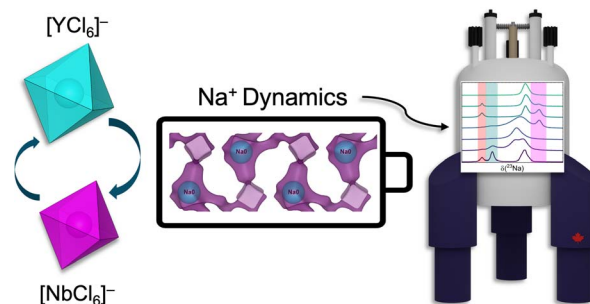
Dominic Herle, Frerik Wurm, Crispin Lichtenberg and Fabian Dankert\*



8007

## Influence of aliovalent substitution on structure and dynamics in sodium halide $\text{Na}_{3-2x}\text{Y}_{1-x}\text{Nb}_x\text{Cl}_6$ solid electrolytes

Brian B. Phan, Tso Shuen, Dmitry Vrublevskiy, Qingyu Yan and Vladimir K. Michaelis\*



8021

## Three wrongs make a right: a computational investigation of $[4n]-[4n]-[4n]$ fused $\pi$ -systems

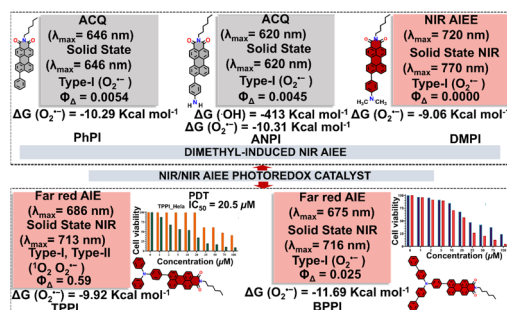
Muhammad Usama Gul Khan, Katarzyna Młodzikowska-Pieńko, Renana Gershoni-Poranne\* and Judy I. Wu\*



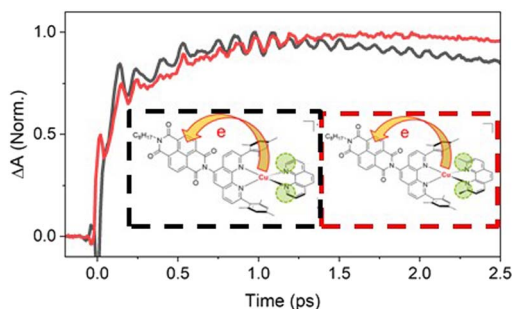
8028

## Heavy-metal free near infrared photoredox catalysts in cancer phototherapy

Mst Nasima Khatun, Satyendu Nandy, Chakali Srinivas, Mrinalini Singh, Ramkrishna Das Adhikari, Sachin Kumar\* and Parameswar Krishnan Iyer\*



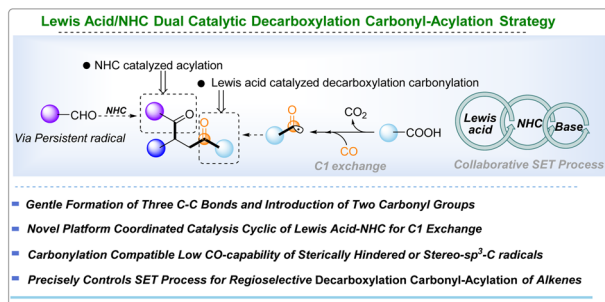
8043



### Jahn–Teller distortion controls electron transfer in photoexcited Cu(I) donor–acceptor systems

Pyosang Kim,<sup>\*</sup> Xinzhen Yang, Brian T. Phelan, Lars Kohler, Karen L. Mulfort,<sup>\*</sup> Xiaosong Li<sup>\*</sup> and Lin X. Chen<sup>\*</sup>

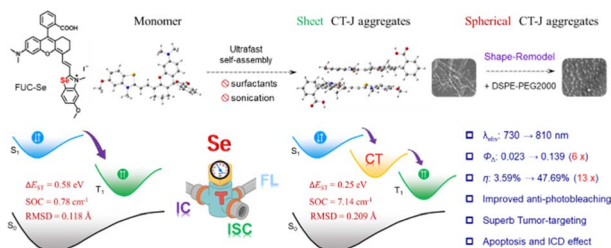
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### Lewis acid/NHC dual catalysis for regioselective vicinal decarboxylative carbonylation–acylation of alkenes

Mao-Lin Yang and Xiao-Feng Wu<sup>\*</sup>

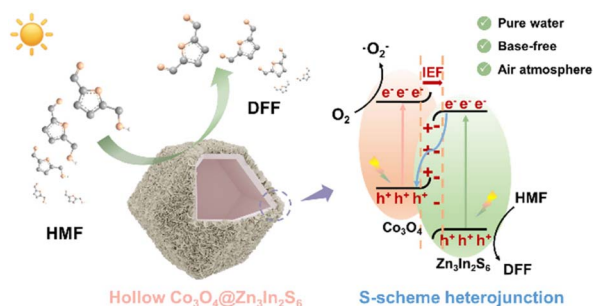
8061



### Zero-trigger ultrafast charge-transfer J-aggregates via Se/ $\pi$ -directed assembly enable synchronous ROS/heat amplification for NIR-II photoimmunotherapy

Dandan Ma, Hui Bian, Fei Pan, Danhong Zhou, Zhi Chen, Haoying Ge, Yuanlang Guo, Yingnan Wu, Xin He, Panwang Zhou, Lei Wang, Xiaoqiang Chen<sup>\*</sup> and Xiaojun Peng<sup>\*</sup>

8076



### Visible-light-driven valorization of 5-hydroxymethylfurfural over a hollow Co<sub>3</sub>O<sub>4</sub>@Zn<sub>3</sub>In<sub>2</sub>S<sub>6</sub> nanocage in base-free water under an air atmosphere

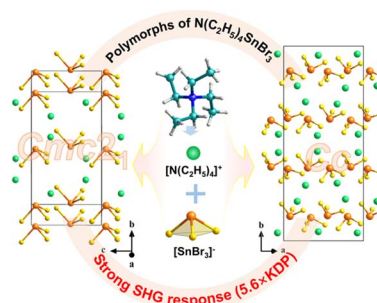
Rong Dang, Kexin Fan, Yan-Ning Wang, Guangsheng Zhu, Liu Liu, Zifu Hu, Taolian Guo,<sup>\*</sup> Wu Chen<sup>\*</sup> and Fengxiang Chen<sup>\*</sup>



8084

### Halogen-ion-driven polymorphs for high-performance nonlinear optical crystalline materials

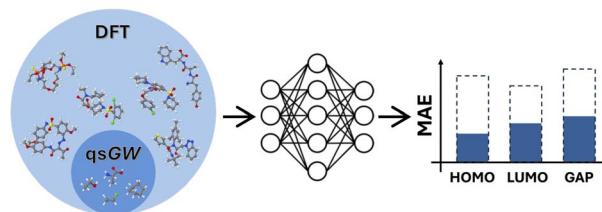
Yuwei Kang, Can Yang, Yunjie Wang and Qi Wu\*



8090

### Transfer learning of GW Bethe–Salpeter equation excitation energies

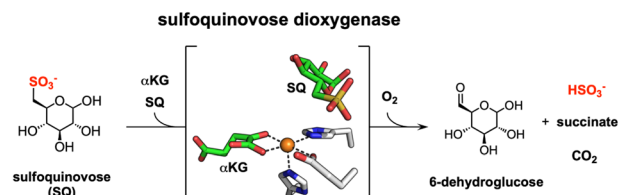
Dario Baum, Arno Förster and Lucas Visscher\*



8100

### Structural and mechanistic basis of sulfolytic C–S bond cleavage by an Fe(III)/ $\alpha$ -ketoglutarate-dependent sulfoquinovose dioxygenase

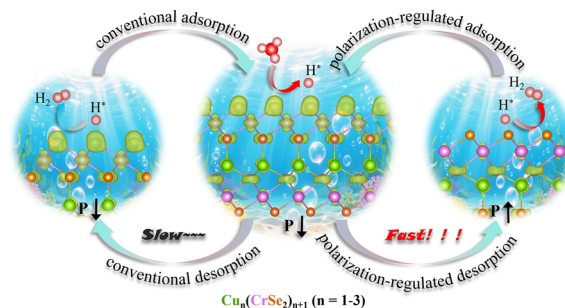
Mihwa Lee,\* Ho N. N. Ho, Megan J. Maher, Guy N. L. Jameson\* and Spencer J. Williams\*



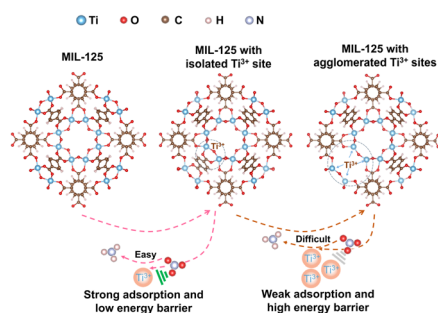
8108

### Reversible polarization-enabled hydrogen evolution reaction on two-dimensional ferroelectric $\text{Cu}_n(\text{CrSe}_2)_{n+1}$ monolayers

Wenyuan Zhang, Jingguo Wang, Qi Wang, Yanling Si\* and Guochun Yang\*



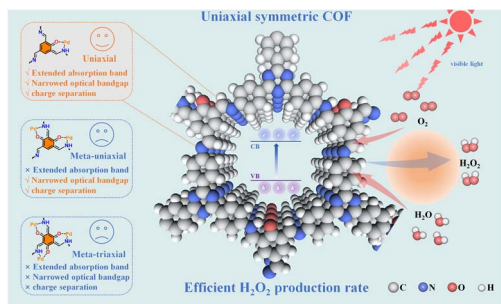
8117



### The critical role of isolated $\text{Ti}^{3+}$ sites in MIL-125 for photocatalytic nitrate reduction: performance enhancement and deactivation mechanism

Lijun Liao,\* Guangquan Zhao, Ruiwen Shu,\*  
Xuepeng Wang, Jinxin Zhang and Ruting Yuan\*

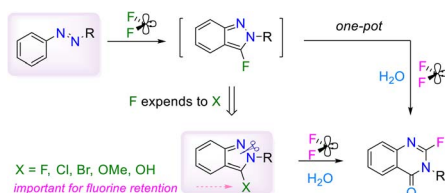
8126



### Tunable axial symmetry $\beta$ -ketoamine covalent organic frameworks for efficient photocatalytic $\text{H}_2\text{O}_2$ synthesis in seawater

Jinyang Chen, Jie Zhou, Na Li, Yeshun Liu, Xubing Deng,  
Faliang Gou, Zhen Yang, Minfeng Zeng,\*  
Mingchao Shao\* and Yunlong Guo\*

8136

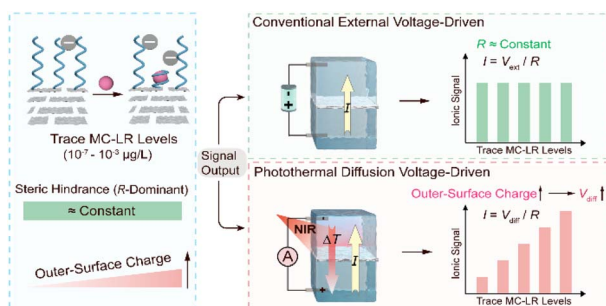


*difluorocarbene-triggered annulation/ring expansion cascade*  
*leaving group controlled fluorine retention*  
*insertion of difluorocarbene into N-N and N=N bonds*

### A difluorocarbene-triggered annulation/ring expansion cascade *via* sequential single-atom-insertions: direct assembly of 2-fluoroquinazolinones from azo compounds

Yingxian Tian, Yiyang Xiong, Jingyu Wei, Gongming Zhu,  
Junbiao Chang and Bingxian Liu\*

8148



### Outer-surface charge modulation of photothermal diffusion voltage enables ultrasensitive sensing in nanofluidic membranes

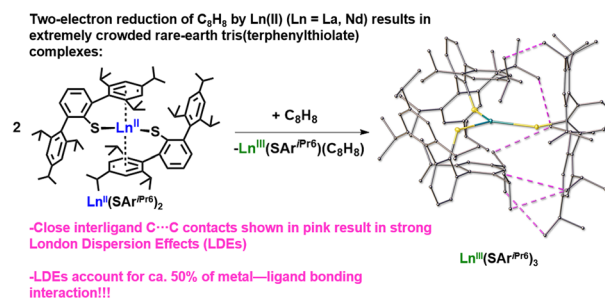
Yihan Ma, Xinyi Yang, Bingquan Qi, Xiaoping Yang,  
Zhengxu He, Ning Feng, Li Dai, Aiqing Zhang,  
Yu Huang\* and Fan Xia



8160

### Unexpected dispersion-stabilized tris(terphenylthiolate) complexes, $\text{Ln}(\text{SAr}^{i\text{Pr}_6})_3$ , arising from two-electron reduction by $\text{Ln}(\text{SAr}^{i\text{Pr}_6})_2$ [ $\text{Ar}^{i\text{Pr}_6} = \text{C}_6\text{H}_3\text{-}2,6\text{-}(\text{C}_6\text{H}_2\text{-}2,6,4\text{-}i\text{Pr}_3)_2$ ]

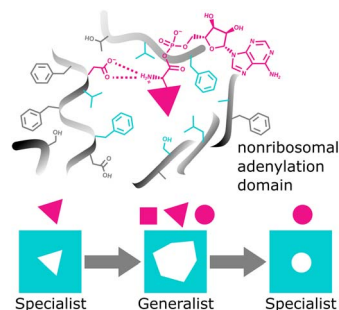
Makayla R. Luevano, Cary R. Stennett, Eric Ma, Joseph W. Ziller, Philipp Furche\* and William J. Evans\*



8168

### Mapping the nonribosomal specificity code through promiscuity-guided A-domain engineering

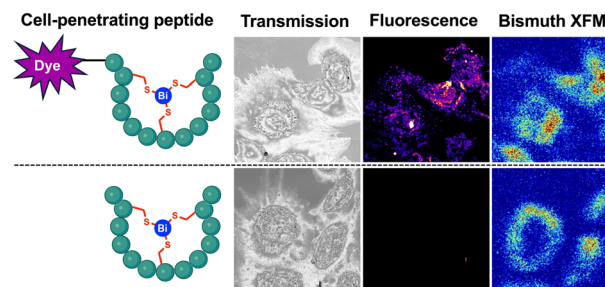
Aleksa Stanišić, Carl-Magnus Svensson, Maximilian Müll, Freddy A. Bernal, Hannah Zeihe, Ulrich Ettelt and Hajo Kries\*



8182

### Triple threat bismuth peptide imaging in cells

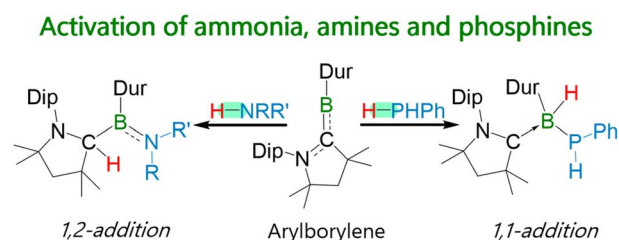
Saan Voss, Clinton J. Kidman, Liam D. Adair, Samuel O. Nitschke, Pramsak Patawanich, Terry Koh, Ani T. Baker, Daryl L. Howard, Elizabeth J. New, Hugh H. Harris\* and Christoph Nitsche\*



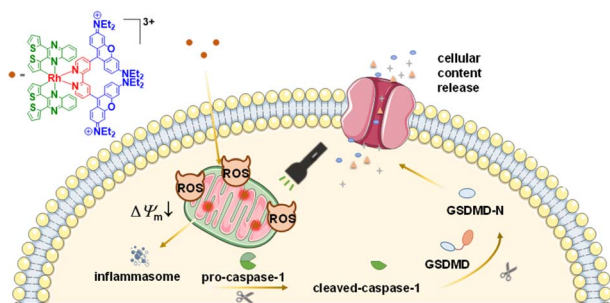
8189

### N–H/P–H bond activation of ammonia, amines and phosphines at a transient borylene

Marco Weber, Sourav Kar, Pia Joos, Rian D. Dewhurst and Holger Braunschweig\*



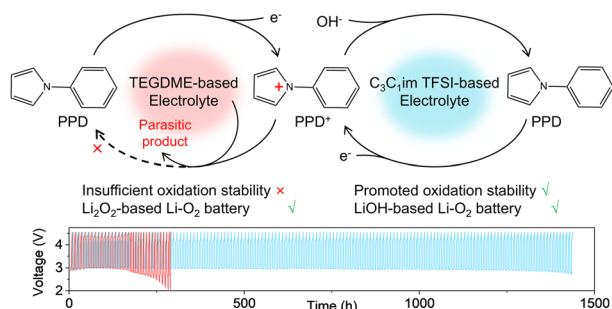
8197



### Mitochondria-targeting cyclometallated rhodium(III) complexes appended with two rhodamine units as Type I photosensitisers for bioimaging and photocytotoxicity applications by inducing pyroptosis

Katherine Gui-Min Jiang, Guang-Xi Xu, Lawrence Cho-Cheung Lee, Fangfang Wei, Siye Wu, Keith Man-Chung Wong\* and Kenneth Kam-Wing Lo\*

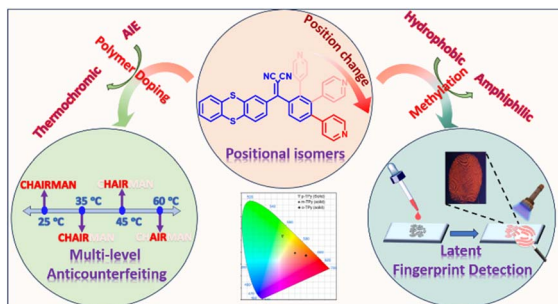
8208



### Tailoring electrolyte activity for a highly stable LiOH redox process in lithium–oxygen batteries

Jiacheng Yang, Jiasen Guo, Zihong Wang, Bing-Qing Xiong, Jun Ma, Dazhuang Wang and Xiaodi Ren\*

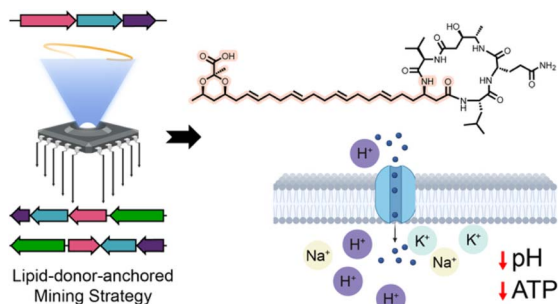
8218



### Stepwise functionalization-induced molecular tweak unveiling multi-level thermochromic data encryption and fingerprint monitoring system

Debika Barman, Retwik Parui and Parameswar Krishnan Iyer\*

8229



### Lipid-donor-anchored genome mining uncovers dioxanopeptides, antibacterial lipopeptides with a 1,3-dioxane functionalized polyunsaturated lipid tail

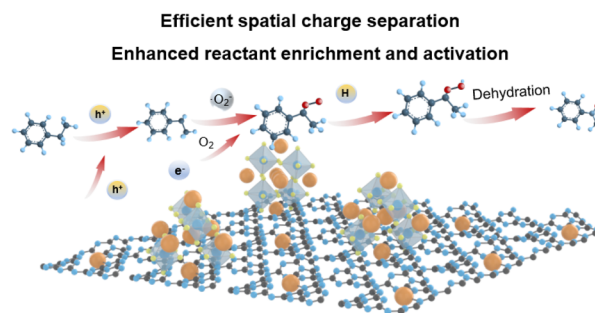
Ying Chen, Yunsheng Chen, Hao Xiang, Changqi Luo, Jiaqi Duan, Kun Hu, Xiaohong Zheng, Jing Liu, Yongbo Xue\* and Yi-Ming Shi\*



8242

### Targeted reactant activation and spatial charge separation for efficient photocatalytic C(sp<sup>3</sup>)-H bond oxidation

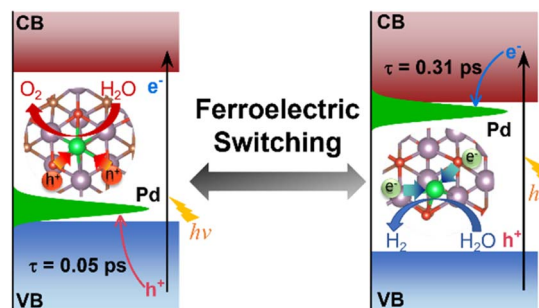
Taoran Chen, Yu Han, Ying Tao, Guojin Huang, Zhengwu Liao, Yulin Wang, Yue Zheng, Yu Wang, Shiqi Li, Wei Zhao, Hongli Sun\* and Chenliang Su



8251

### Polarization-induced reversible electron-hole migration and redox reaction switching in ferroelectric single-atom photocatalysts

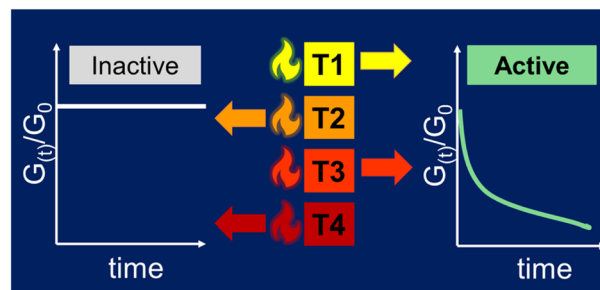
Yuan Tang, Cen-Feng Fu,\* Xingxing Li\* and Jinlong Yang



8260

### Temperature orthogonal dynamic polymer networks

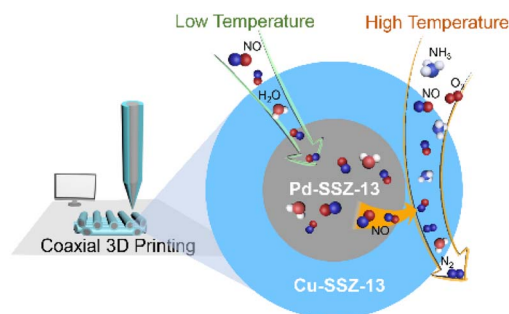
Matthias Udo Mayer-Kriehuber, Evelyn Sattler, David Reisinger, Daniel Bautista-Anguis, Szymon Gaca, Pia Maria Egger, Fleana A. Sabatino, Sebastian Maar and Sandra Schlögl\*



8272

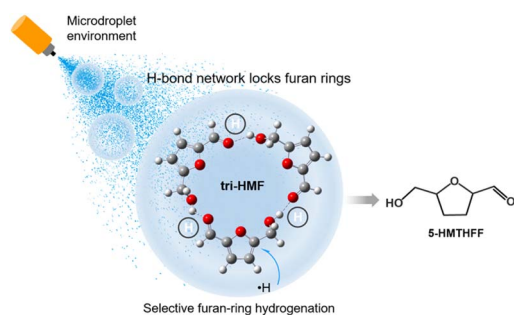
### Coaxial 3D printing of zeolite core-shell structured catalysts for integrated NO<sub>x</sub> adsorption and selective catalytic reduction in cold start application

Yingzhen Wei, Jingyi Feng, Dan Li, Youji Qi, Mengyang Chen, Shuang Wang, Jinfeng Han and Jihong Yu\*



## EDGE ARTICLES

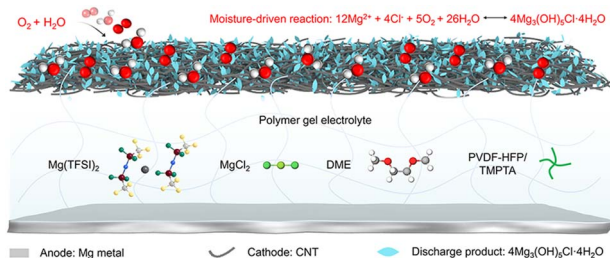
8281



### Non-covalent assembly-enabled selectivity in aqueous microdroplets

Zhiheng Ma, Pengju Wu, Xianlong Zhou,\* Lingchao Cai, Thomas Heine\* and Yu Jing\*

8291



### Moisture-driven discharge chemistry enables the fabrication of highly reversible magnesium–oxygen polymer batteries

Ju Lin, Long Jiang, Shifan Zheng, Jing Zhou, Yulong Wan and Lie Wang\*

## CORRECTIONS

8300

### Correction: Polyterrylenes: synthesis and regioregularity effect on p-type charge transport and deep-red light photodetection in OFETs

Chittrak Ghosh, Minji Chung, Hayeong Park, Aniket Jitendra Talreja, Ullrich Scherf, Joon Hak Oh\* and Suman Kalyan Samanta\*

8305

### Correction: A theoretical framework to understand high electron mobilities in cable bacteria

Andrew J. Smith and David N. Beratan\*

