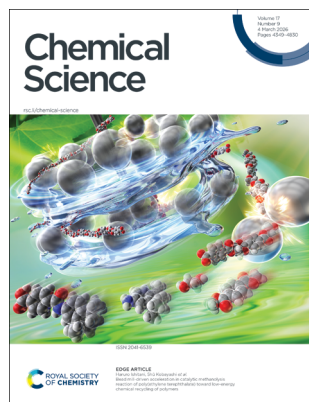


## IN THIS ISSUE

ISSN 2041-6539 CODEN CSHCBM 17(9) 4349–4830 (2026)



**Cover**  
See Haruro Ishitani, Shū Kobayashi *et al.*, pp. 4456–4469. Image reproduced by permission of Shū Kobayashi from *Chem. Sci.*, 2026, 17, 4456.



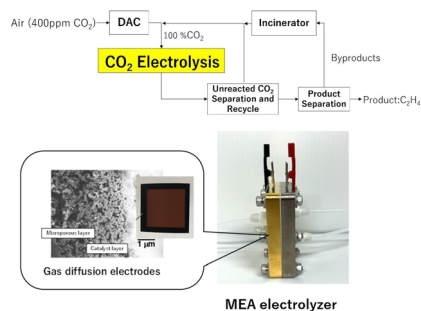
**Inside cover**  
See Kazuhide Kamiya, Sho Kataoka *et al.*, pp. 4363–4374. Image reproduced by permission of Kazuhide Kamiya from *Chem. Sci.*, 2026, 17, 4363.

## PERSPECTIVE

4363

### Gaseous CO<sub>2</sub> electrolysis: latest advances in electrode and electrolyzer technologies toward abating CO<sub>2</sub> emissions

Kazuhide Kamiya,\* Sora Nakasone, Ryo Kurihara, Asato Inoue, Hazuki Irie, Shoko Nakahata, Yuta Nishina, Satoshi Taniguchi, Thuy T. H. Nguyen and Sho Kataoka\*

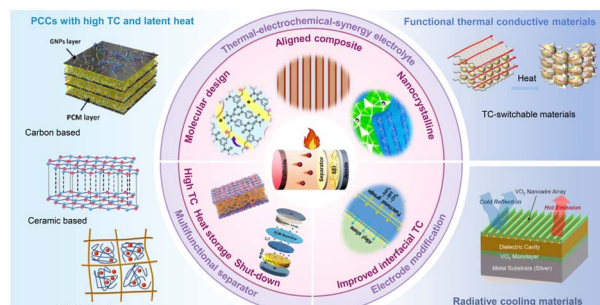


## REVIEWS

4375

### Materials design for thermally improved safety in lithium-ion batteries

Songpei Nan, Guoxin Gao, Wei Yu, Shujiang Ding\* and Dawei Ding\*



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# EES Batteries

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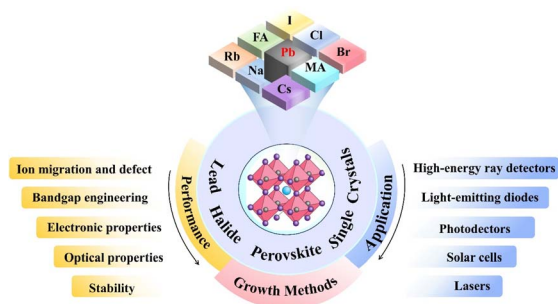
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## REVIEWS

4395

## Recent advances in lead halide perovskite single crystals for optoelectronic devices

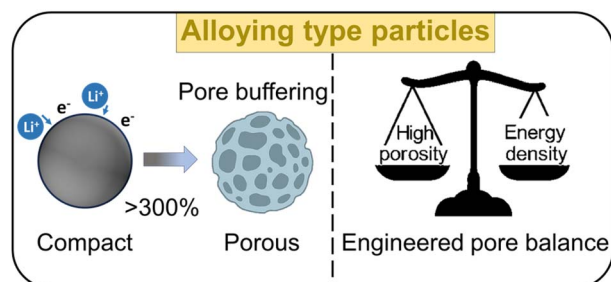
Lu Zi,\* Ximan Fan, Le Liu, Shuna Guan, Hongxian Wei, Jiaqi Chen, Xiaojuan Zhuang\* and Wen Xu\*



4428

## Porous alloying-type particles for practical lithium-ion battery anodes

Yiteng Luo, Sai Ho Pun, He Yan\* and Wei Liu\*

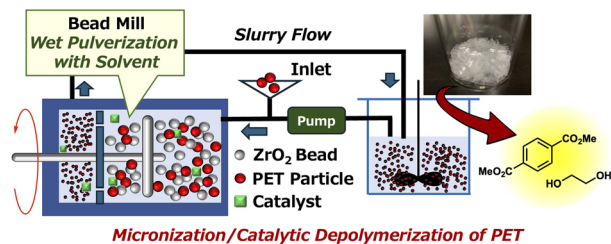


## EDGE ARTICLES

4456

## Bead mill-driven acceleration in catalytic methanolysis reaction of poly(ethylene terephthalate) toward low-energy chemical recycling of polymers

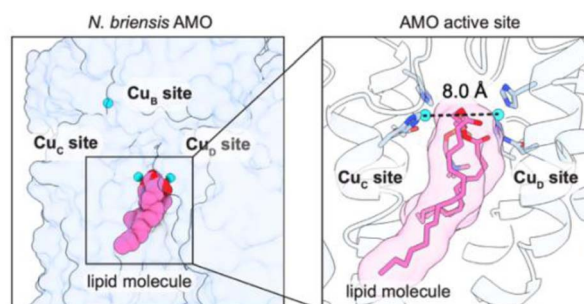
Tomoya Kawase, Haruro Ishitani\* and Shū Kobayashi\*



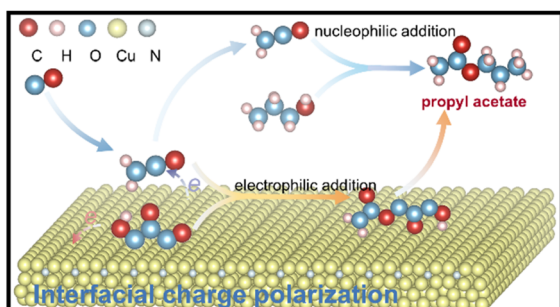
4470

Simultaneous occupancy of Cu<sub>C</sub> and Cu<sub>D</sub> in the ammonia monooxygenase active site

Frank J. Tucci, Madeline B. Ho, Aaron A. B. Turner, Lisa Y. Stein, Brian M. Hoffman and Amy C. Rosenzweig\*



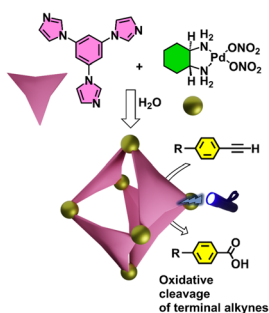
4478



### Interfacial polarization enables dual pathways for electro-synthesis of propyl acetate

Xichang Liu, Yimin Jiang, Wei Chen, Jixiang Wu, Yongmin He, Yu-Cheng Huang, Ying-Rui Lu, Yansong Zhou\* and Shuangyin Wang\*

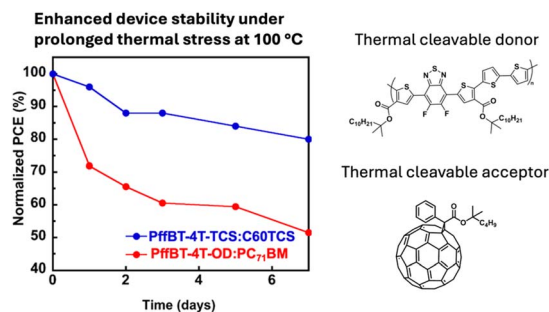
4487



### Selective photocatalytic oxidative cleavage of terminal alkynes to carboxylic acids within a water-soluble Pd<sub>6</sub> nanocage

Pranay Kumar Maitra, Valiyakath Abdul Rinshad, Neal Hickey and Partha Sarathi Mukherjee\*

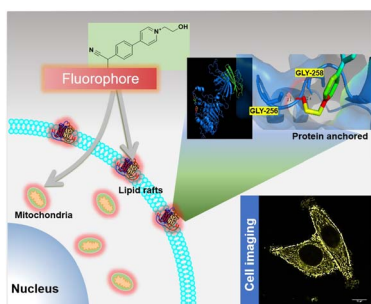
4496



### Enhancing long-term morphological stability in BHJ organic solar cells through thermocleavable sidechains under continuous thermal stress

Haoyu Zhao, Jordan Shanahan, Jiyeon Oh, Saroj Upreti, Guorong Ma, Wei You\* and Xiaodan Gu\*

4507



### A molecular scaffold for concurrent targeting of plasma and mitochondrial membranes

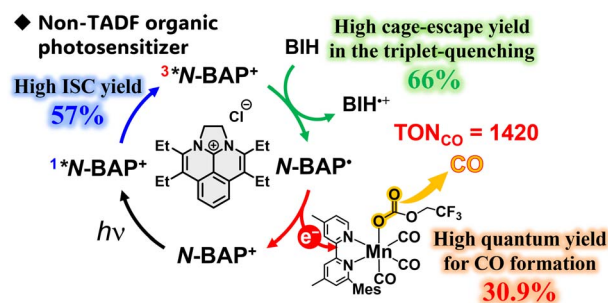
Youbo Lai, Yi Yang, Yuping Zhao, Tony D. James\* and Weiyang Lin\*



4518

### Photocatalytic CO<sub>2</sub> reduction using a diazabenzacenaphthenium photosensitizer and a Mn catalyst

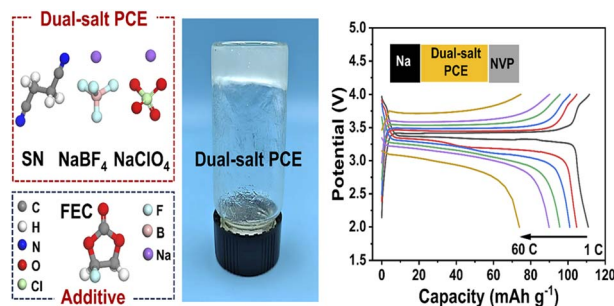
Kei Kamogawa,\* Shintaro Okumura\* and Osamu Ishitani\*



4529

### A solid dual-salt plastic crystal electrolyte enabling rapid ion transfer and stable interphases for high-performance solid-state sodium ion batteries

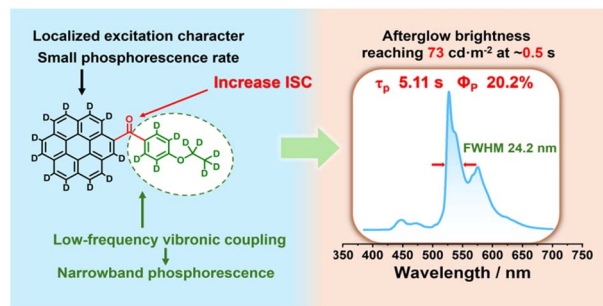
Yang Jiang, Rui Wang, Peng Xiong, Yangyang Liu, Hongbao Li, Longhai Zhang,\* Ya You and Chaofeng Zhang\*



4538

### Ultrabright and narrowband organic afterglow achieved by molecular engineering of coronene

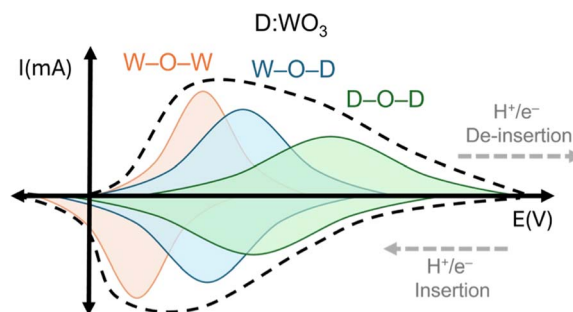
Yuanyuan Chen, Yue Zhang, Guoyi Wu, Ting Luo, Jialiang Jiang, Tengyue Wang, Xiaoya Guo\* and Kaka Zhang\*



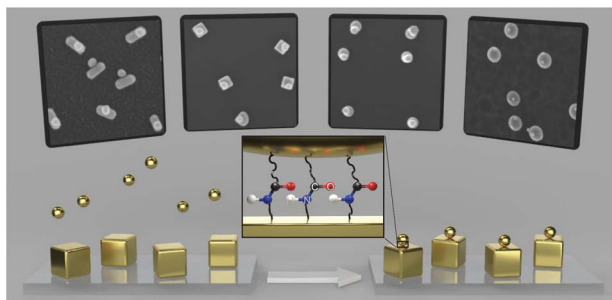
4548

### Effects of heteroatom doping on hydrogen uptake in tungsten oxide

Noah P. Holzapfel, Nikolaos Effraim Papamatthaiakis, Jay R. Paudel, Giannis Mpourmpakis, Ethan J. Crumlin and Veronica Augustyn\*



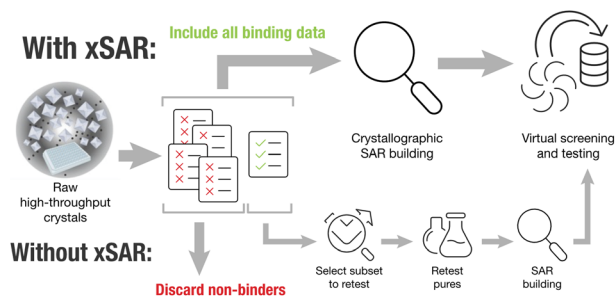
4562



### Controlled high-yield assembly of gold nanoparticles *via* amide bond formation

Seoyoung Hwang, Yeonsoo Lim, Sunbum Kwon\* and Sangwoon Yoon\*

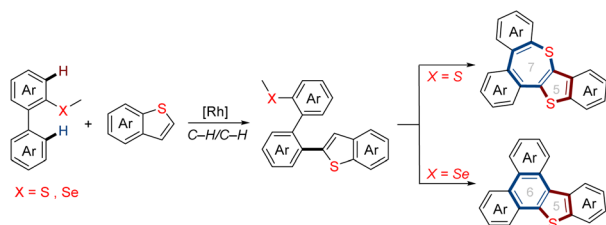
4571



### Structure–activity relationships can be directly extracted from high-throughput crystallographic evaluation of fragment elaborations in crude reaction mixtures

Harold Grosjean, Kate K. Fieseler, Rubén Sanchez-Garcia, Warren Thompson, Charlotte M. Deane, Frank von Delft and Philip C. Biggin\*

4594

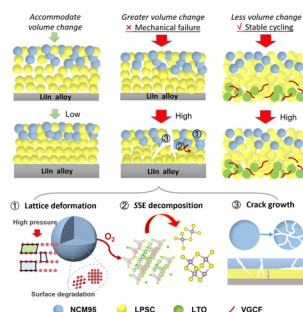


### Rh(III)-catalyzed heteroannular-selective heteroarylation of biaryls: facile access to heteroacenes with sulfur-embedded 5–7 ring topology

Zhanhui He, Li Yang, Menghang Zhou, Yue Zhong, Zheng Liu,\* Ziao Zhang, Feiyang Xia, Xuezhe Deng, Shuang Yan, Cheng Xu, Cheng Zhang\* and Guodong Yin\*

- Heteroannular C–H/C–H oxidative coupling
- Good functional group tolerance
- Selective cyclization via C–S/Se bond cleavage
- Scale-up synthesis
- Heteroacenes with sulfur-embedded 5–7 ring topology

4601



### Exploring stacking pressure-induced mechanical failure of a Ni-rich cathode in sulfide solid-state batteries

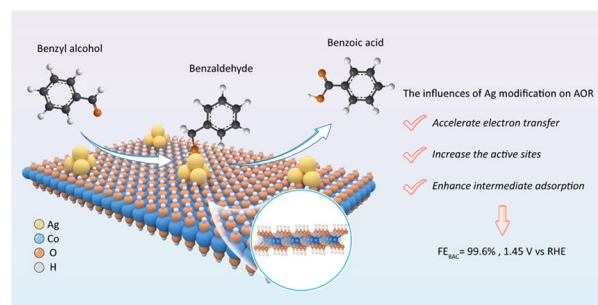
Yiman Feng, Zhixing Wang, Gui Luo, Duo Deng, Wenjie Peng, Wenchao Zhang, Hui Duan, Feixiang Wu, Xing Ou, Junchao Zheng and Jiexi Wang\*



4612

### Ag-triggered $\text{Co}^{4+}$ active sites enable $\text{OH}^*$ nucleophilic attack for efficient electrocatalytic oxidation of alcohols to acids

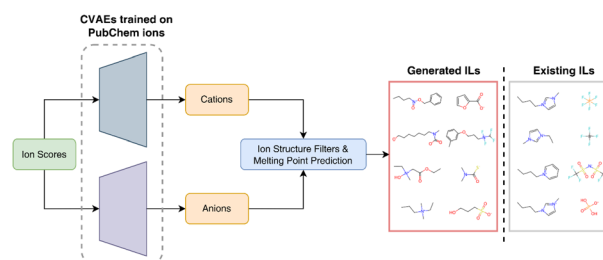
Yu-Wei Du, Jian-Yu Zhang, Hao-Jun Luo, You Zhang, Xi-Ting Zhang, Ting Ouyang\* and Zhao-Qing Liu\*



4621

### Expanding the chemical space of ionic liquids using conditional variational autoencoders

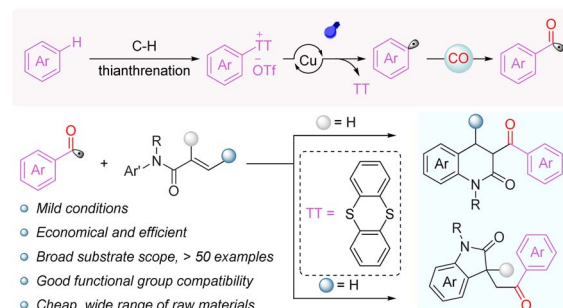
Gaopeng Ren, Austin M. Mroz, Frederik Philippi, Tom Welton and Kim E. Jelfs\*



4632

### Controllable copper-catalysed photo-induced carbonylative cyclization to access dihydroquinolinones and oxindoles

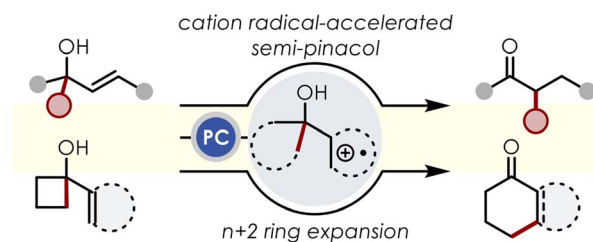
Yan-Hua Zhao, Le-Cheng Wang and Xiao-Feng Wu\*



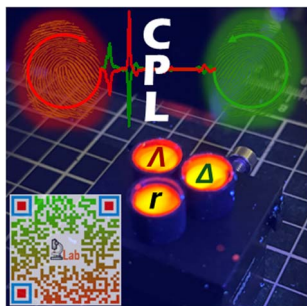
4640

### Cation radical-mediated semi-pinacol and $n+2$ ring expansions via organic photoredox catalysis

Brandon B. Fulton, Connor T. Owen and David A. Nicewicz\*



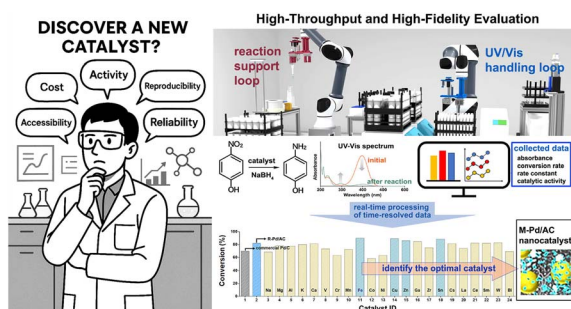
4649



### Complete stereochemical control to unlock monosign circularly polarised luminescence with superior circularly polarised brightness for chameleon security inks

Artemijs Krimovs, Dominic J. Black, Aileen Congreve and Robert Pat\*

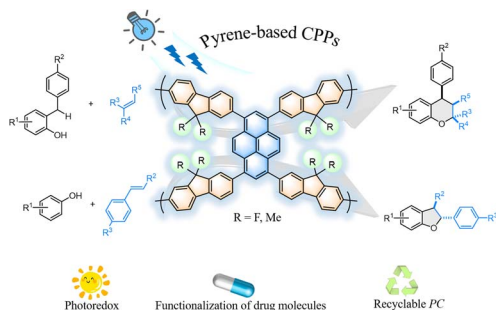
4659



### Fully automated and high-fidelity robotic platform enabling accelerated discovery of nanocatalysts

Shin Wook Kang, Kyung Hee Oh, Kanghoon Yim, Sanha Jang, Jin Gyu Lee, Jung-Il Yang and Ji Chan Park\*

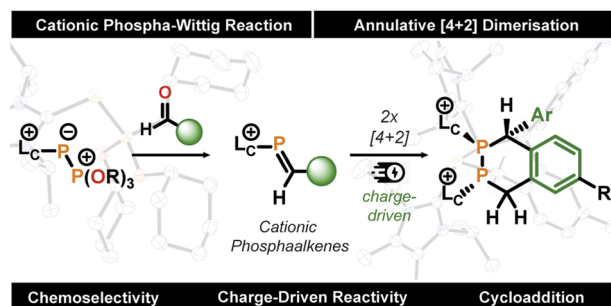
4669



### Pyrene-based conjugated porous polymers as photocatalysts for oxidative cycloaddition of phenols

Shuili Liu, Xingji Liu, Xiu Gu, Shicheng Dong, Nan Huang,\* Lei Shi\* and Jun Jiang\*

4678



### Chemoselectivity in the cationic Phospha-Wittig reaction: accessing phosphorus heterocycles, phosphoalkenes, and their annulated [4 + 2] dimers

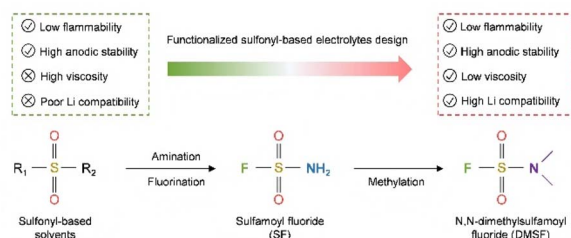
Philipp Royle, Kai Schwedtmann, Rosa M. Gomila, Antonio Frontera and Jan J. Weigand\*



4688

### Tailoring terminal groups in sulfonyl solvents to boost compatibility with lithium metal anodes

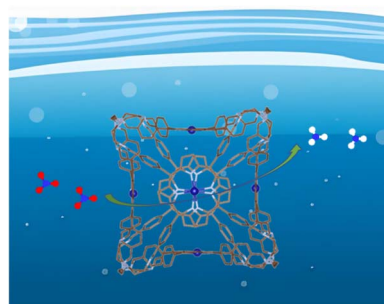
Jinmin Wang, Shuang Wei, Mingming Fang,\* Angye Li, Qian Zheng, Xubing Dong, Yuanmao Chen, Kang Yuan, Xinyang Yue\* and Zheng Liang\*



4697

### Strong d–p orbital hybridization in cobalt porphyrin cages promotes electrochemical nitrate reduction to ammonia

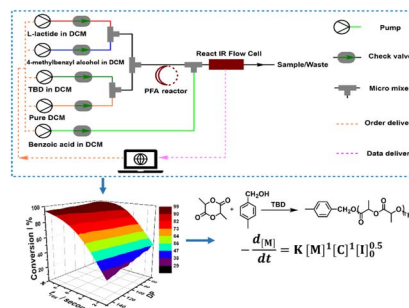
You Wu, Yangpeng Zhang, Hao Zhao, Yang Peng, Hailing Ma, Fangyuan Kang, Zhonghua Li,\* Yang Liu\* and Qichun Zhang\*



4706

### Multidimensional kinetic study on the organocatalyzed ring-opening polymerization (ROP) of L-lactide *via* a robotic high-throughput flow platform

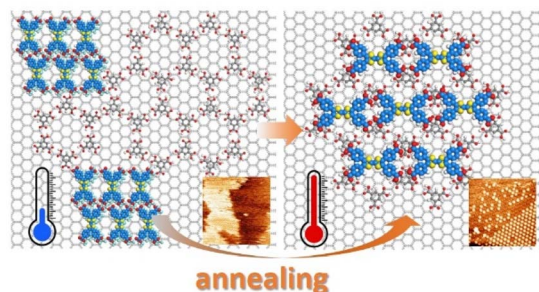
Bo Zhang and Tanja Junkers\*



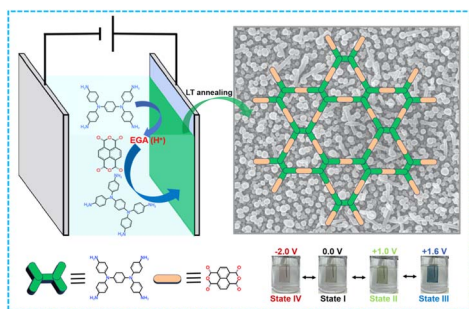
4715

### Thermal-mediated modulation of binary supramolecular self-assembly from phase separation to co-crystallization at the liquid–solid surface

Fang Chen, Jun He, Attia Shaheen, Yi Hu\* and Shern-Long Lee\*



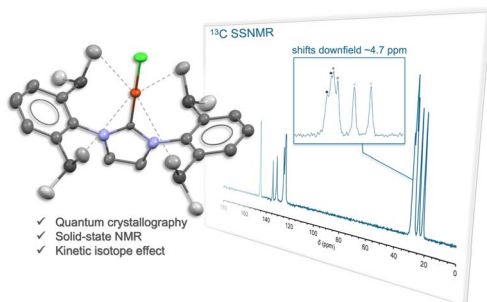
4722



### Rapid preparation of imide-based COF films through electropolymerization integrated with low-temperature annealing for high-performance electrochromic energy storage

Jinming Zeng,\* Huiling Hou, Lei Huang, Zheng Xie, Qingqing Qiu, Huan Li, Dongfa Liu, Putrakumar Balla, Tongxiang Liang and Ping Liu\*

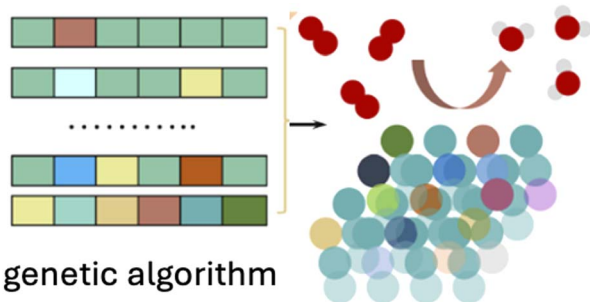
4734



### Hidden in plain sight: commonly used copper N-heterocyclic carbene catalysts gain stabilization from anagostic Cu...H-C interactions

Connly Yan, Tiejian Chang, Yu-Sheng Chen, Alexander L. Paterson, Dan McElheny and Neal P. Mankad\*

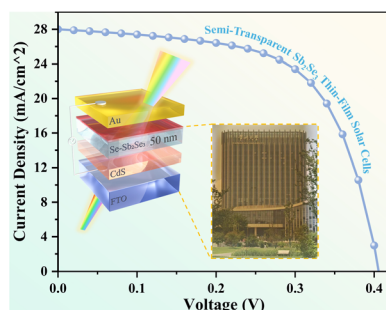
4744



### Finding the Pareto front for high-entropy-alloy catalysts

Chengyi Zhang, Ruihu Lu, Qi Sun, Yu Mao, Tilo Söhnel, Yan Zhao,\* Donald G. Truhlar\* and Ziyun Wang\*

4753



### Active selenium-driven confined crystallization and carrier dynamics in high-efficiency ultrathin semi-transparent Sb<sub>2</sub>Se<sub>3</sub> solar cells

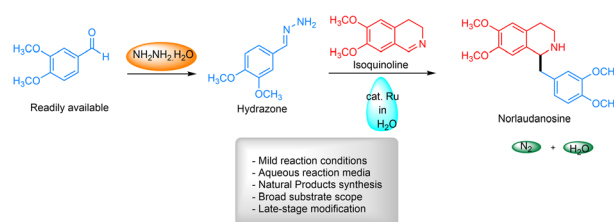
Huafei Guo,\* Bangzhi Shen, Xing Wang, Jiayu Xiao, Wenyun Deng, Sai Jiang,\* Lei Xu, Xu Dong,\* Lvzhou Li, Shuai Zhang, Jianhua Qiu,\* Ningyi Yuan and Jianning Ding



4765

### A general aqueous synthetic strategy towards 1-benzylTHIQs enabled by umpolung hydrazone

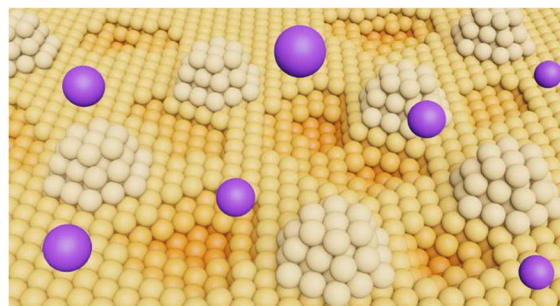
Manpreet Kaur, Evan F. W. Chen, Jan Michael Salgado, Ruofei Cheng and Chao-Jun Li\*



4771

### Electrolyte concentration modulates the surface structure evolution of Au(111) cathodes

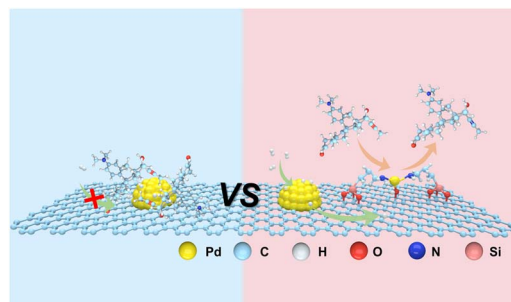
Yue Feng, Yu-Qi Wang,\* Jiaju Fu, Zi-Cong Wang, Dong Wang\* and Li-Jun Wan\*



4780

### Beyond the Lindlar catalyst: highly-oxidized Pd single atoms as promoters for alkyne semi-hydrogenation

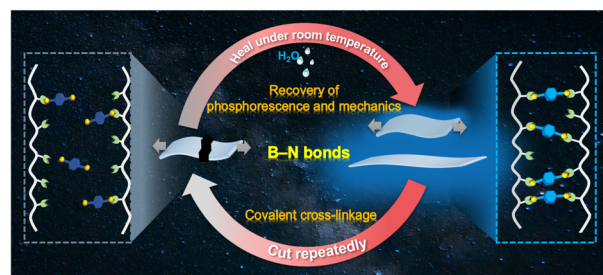
Ming Jiang, Yao Lv, Zhongzhe Wei,\* Xu Liu, Zhixiang Yang, Chuanming Chen, Yiming Hu, Fangjun Shao, Xiaonian Li, Jiaying Hu,\* Sheng Dai\* and Jianguo Wang\*



4794

### Breaking the paradox: simultaneous recovery of phosphorescence and mechanical properties in polymeric films

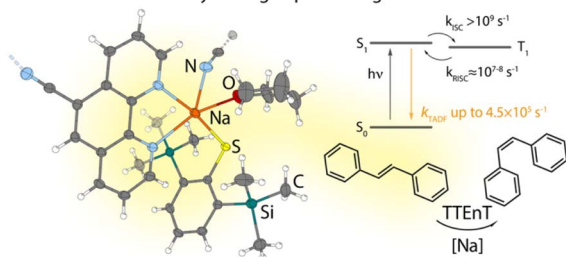
Yan Wang, Kaitao Li, Yongpeng Yang, Rui Tian\* and Chao Lu\*



## EDGE ARTICLES

4803

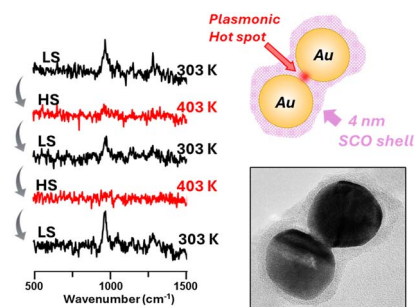
Efficient TADF with sodium-based luminophores enabled by through-space charge transfer



**Sodium-based donor–acceptor assemblies featuring thermally activated delayed fluorescence enabled by highly efficient through-space charge transfer**

Ondřej Mrózek,<sup>\*</sup> Tabea Heil, Lukáš Hanzl, Andrey Belyaev, Indranil Sen, Patrick Pilch, Zhe Wang and Andreas Steffen<sup>\*</sup>

4814



**Plasmonically enhanced Fe(II) coordination complexes allow SERS readout of spin state switching below the optical diffraction limit**

Yingrui Zhang, Zoi G. Lada, Wafaa Aljuhani, Yijun Lu, Chunchun Li, Yikai Xu, Grace G. Morgan and Steven E. J. Bell<sup>\*</sup>

## CORRECTIONS

4825

**Further correction: Reductive annulations of arylidene malonates with unsaturated electrophiles using photoredox/Lewis acid cooperative catalysis**

Rick C. Betori, Benjamin R. McDonald and Karl A. Scheidt<sup>\*</sup>

4827

**Correction: NeoMProbe: a new class of fluorescent cellular and tissue membrane probe**

Saurabh Anand, Preeti Ravindra Bhoge, Rakesh Raigawali, Srinivas Vinod Saladi<sup>\*</sup> and Raghavendra Kikkeri<sup>\*</sup>

