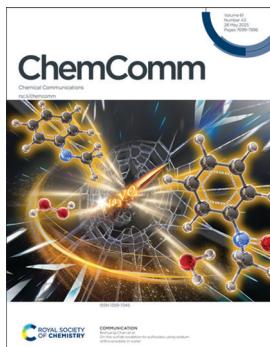


The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

### IN THIS ISSUE

ISSN 1359–7345 CODEN CHCOFS 61(43) 7699–7896 (2025)



#### Cover

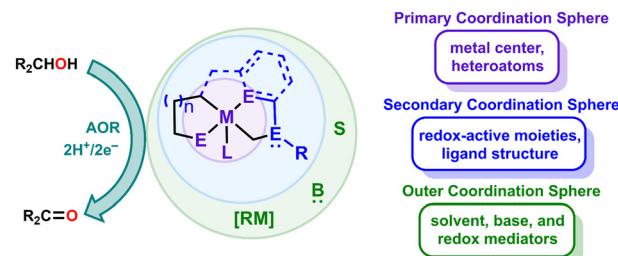
See Bishuang Chen et al.,  
pp. 7795–7798.  
Image reproduced  
by permission of  
Bishuang Chen from  
*Chem. Commun.*,  
2025, **61**, 7795.

### HIGHLIGHT

7710

#### Molecular catalyst and co-catalyst systems based on transition metal complexes for the electrochemical oxidation of alcohols

Mollie C. Morrow and Charles W. Machan\*

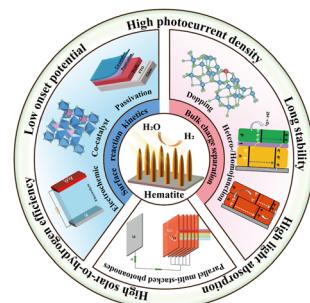


### FEATURE ARTICLES

7724

#### Hematite photoanode for efficient photoelectrochemical water splitting: recent advances and outlook

Ke Liang, Jing Yang, Maoxuan Ye, Yuanming Zhang,  
Youn Jeong Jang and Hemin Zhang\*



GOLD  
OPEN  
ACCESS

# EES Solar

Exceptional research on solar  
energy and photovoltaics



Part of the EES family

Join  
in

Publish with us

[rsc.li/EESSolar](http://rsc.li/EESSolar)

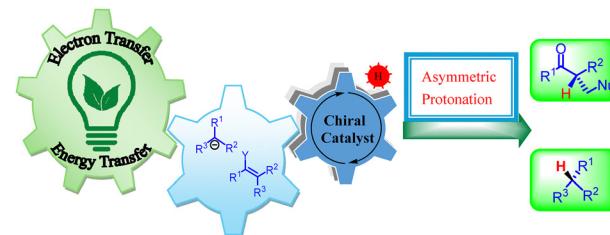
Registered charity number: 207890

## FEATURE ARTICLES

7737

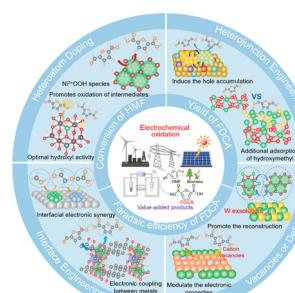
**Visible-light-driven enantioselective protonation:  
a new Frontier in asymmetric catalysis**

Chenhai Zhang and Zhiyong Jiang\*



7751

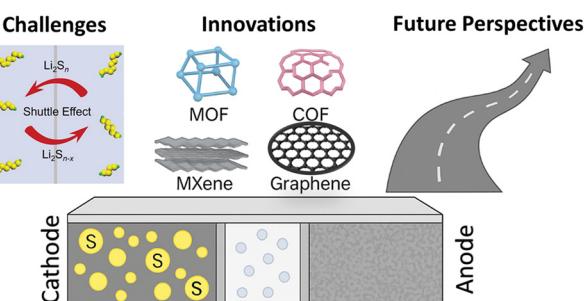
**Selective electrooxidation of  
5-hydroxymethylfurfural to value-added  
2,5-furanodiformic acid: mechanism, electrolyzer  
system, and electrocatalyst regulation**

Yang Yu, Junqing Ma, LiLi Zhang, Tongming Sun,  
Minmin Wang, Jinli Zhu and Jiacheng Wang\*

7770

**New materials for lithium–sulfur batteries:  
challenges and future directions**

Montree Sawangphruk

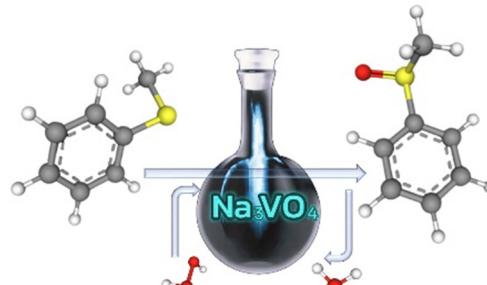


## COMMUNICATIONS

7795

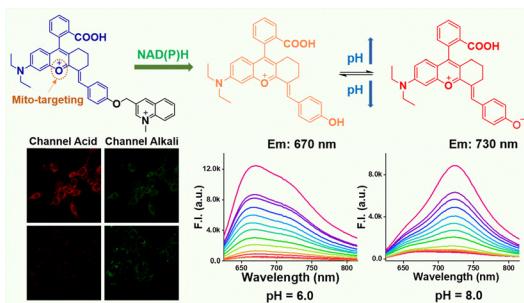
**On the sulfide oxidation to sulfoxides using sodium  
orthovanadate in water**

Yunhan Zhang, Yiting Su, Lan Liu and Bishuang Chen\*



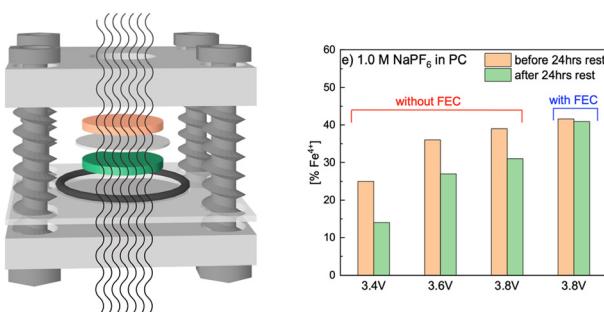
## COMMUNICATIONS

7799

**A dual-response fluorescent probe Rh-O-QL for simultaneous monitoring of NAD(P)H and pH during mitochondrial autophagy**

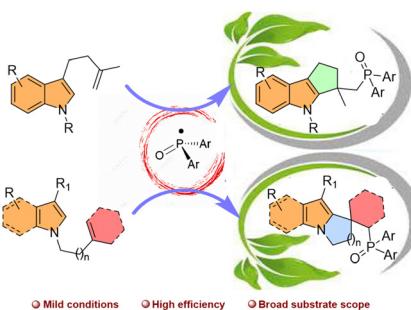
Liandi Guan, Wanting Hu, Shiyu Zhang, Yongjian Ai and Qionglin Liang\*

7803

**In situ Mössbauer spectroscopy confirms that fluoroethylene carbonate stabilizes Fe<sup>4+</sup> in charged NaFeO<sub>2</sub>**

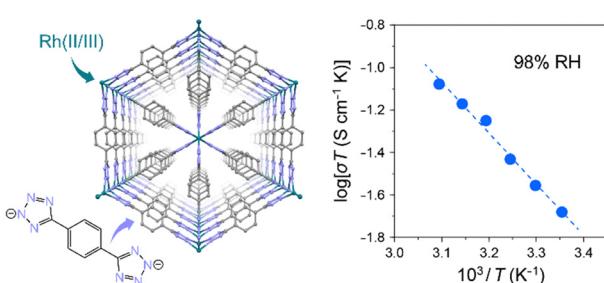
Iddrisu Bachokun Abdul Razak, Dhilip Kanna Ashok Kumar, Bomin Li, Emma Anne Lynch, Dennis Brown and Yingwen Cheng\*

7807

**Harnessing phosphorus-centered radicals for the synthesis of cyclopenta[b]indole and pyrrolo[1,2-a]indole frameworks**

Palash Ghosh, Pralay Das, Prathama S. Mainkar, Rudrakshula Madhavachary\* and Srivari Chandrasekhar\*

7811

**Self-assembled metal-organic framework composed of one-dimensional Rh(II/III) chains with an octahedral [RhN<sub>6</sub>] coordination**

Ai Kurahashi, Yukihiro Yoshida\* and Hiroshi Kitagawa\*

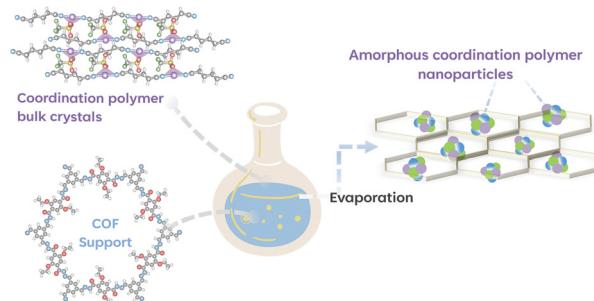


## COMMUNICATIONS

7815

**Stabilisation of amorphous coordination polymer nanoparticles in a covalent organic framework**

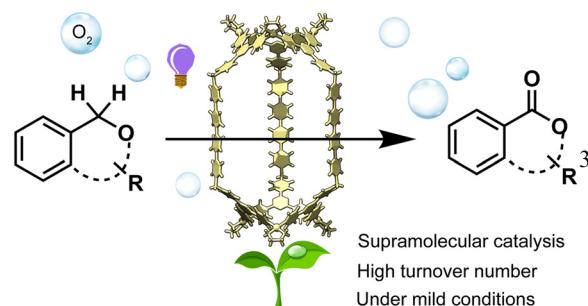
Boonrasri Seeleang, Soracha Kosasang,\* Karnjana Atthawilai, Thanakorn Tiyawarakul, Thidarat Imyen, Kanokwan Kongpatpanich and Satoshi Horike\*



7819

**Coordination-assembly of a redox-active  $Pd_6L_3$  cage for aerobic  $C(sp^3)-H$  bond photooxidation of aromatic cyclic ethers**

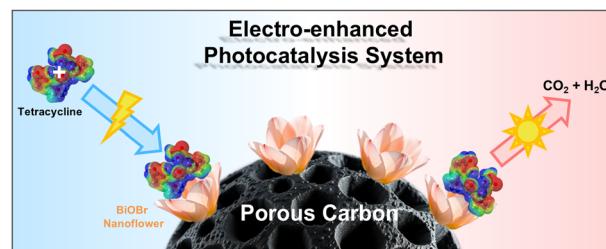
Yu-Hang Hu, Fan Yin, Shun-Xing Hong, Li-Peng Zhou, Ke-Han Tang, Ying-Mei Zhong, Chen-Chen Li, Li-Xuan Cai\* and Qing-Fu Sun\*



7823

**Electro-enhanced mass transfer boosting photocatalysis towards ionized organic pollutants**

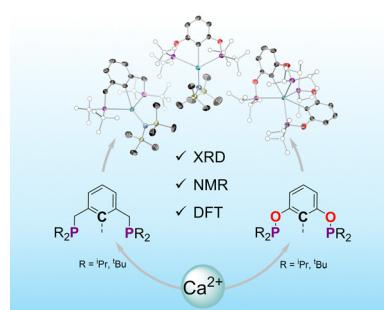
Ziquan Wang, Mengyu Zhao, Zengye Chen, Zhujie Liang, Fengcheng Yang, Yongliang Li and Libo Deng\*



7827

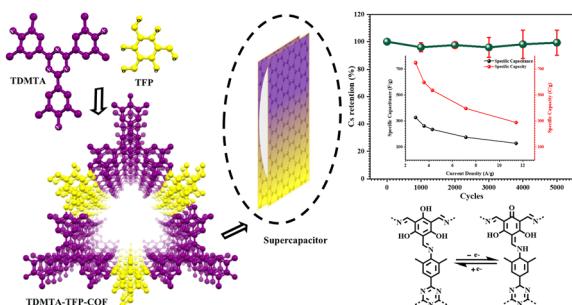
**PCP and POCOP complexes of calcium**

Alessandro Messori, Marcel Potocnik, Sara Belazregue, Richard Collins, Tobias Krämer and F. Mark Chadwick\*



## COMMUNICATIONS

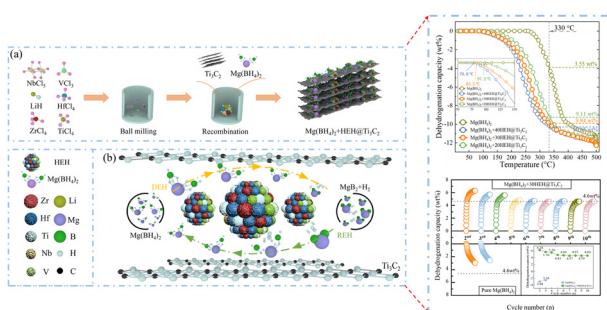
7831



### An electron rich triazine-based covalent organic framework as an aqueous electrolyte symmetric supercapacitor

Divya, Ravi Rajan Panday, Shahjad Ali, Md Ehsan Ali, Sarita Kalla, Rakesh K. Pandey\* and Ritambhara Jangir\*

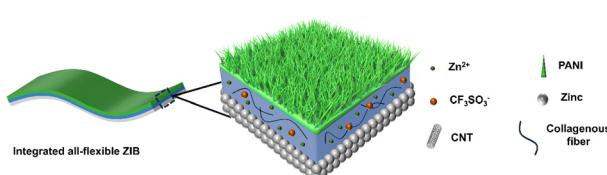
7835



### Facile fabrication of an Mxene-supported nano high-entropy hydride unlocking reversible hydrogen storage in Mg(BH<sub>4</sub>)<sub>2</sub>

Ao Xia, Jiaguang Zheng,\* Zhenxuan Ma, Changhai Wu, Cong Li and Beibei Xiao\*

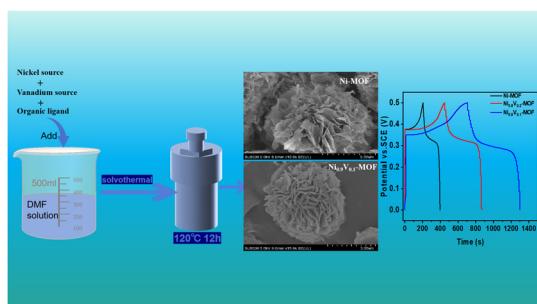
7839



### An integrated all-flexible zinc-ion battery based on leather gel electrolyte

Shi-yi Shen, Jia-hua Guo, Si-qi Zheng, Shuang Gu, Wen-Bo Pei,\* Jiansheng Wu,\* Xia Liu, Xiao-Ming Ren and Fengwei Huo

7843



### Fabrication of a vanadium-doped Ni-MOF with a hydrangea-like morphology as an electrode for high-performance supercapacitors

Sicong Zhang, Jingce Bi, Qingfeng Zhan, Ningning Liu, Xia Zhang, Zhuopeng Wang and Yide Han\*

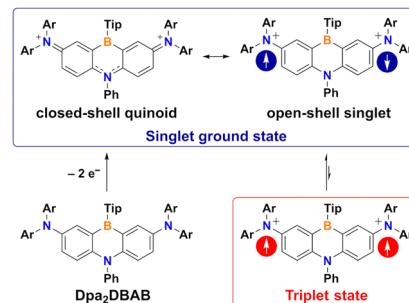


## COMMUNICATIONS

7847

**Dicationic dibenzo[1,4]azaborine with an open-shell electronic structure**

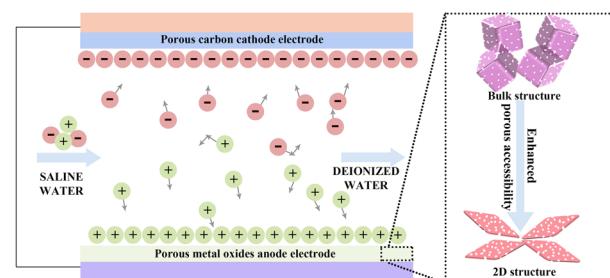
Peiyuan Yang, Yizhou Chen, Takuma Kuroda, Haruto Morishita, Hiroki Fukumoto, Masato Morita, Koichiro Masada, Takahiro Sasamori, Kazuya Kubo, Kazuhiro Marumoto,\* Ryo Inoue,\* Shin-ichiro Kato\* and Tomohiro Agou\*



7851

**Engineering the dimensionality of porous  $\text{Co}_3\text{O}_4$  for enhanced capacitive deionization performance**

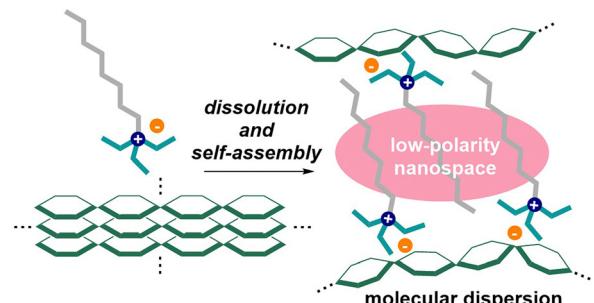
Mohua Li, Qi Ran, Jiarui Fan, Yue Liu, Wenjie Wu,\* Yunyong She, Zhongxiang Liu, Haiyan Hu\* and Xingtao Xu\*



7855

**A cellulose-stimulated self-assembling solvent for molecular dispersion of cellulose**

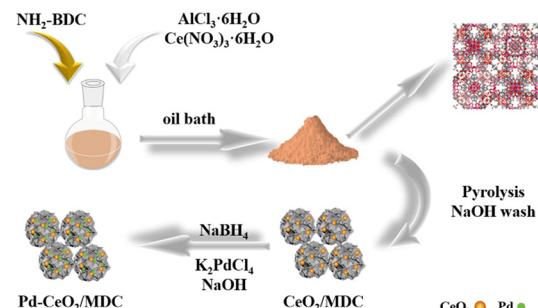
Keisuke Jono, Yuki Ogawa, Naoaki Yamasaki, Takuya Uto\* and Kosuke Kuroda\*



7859

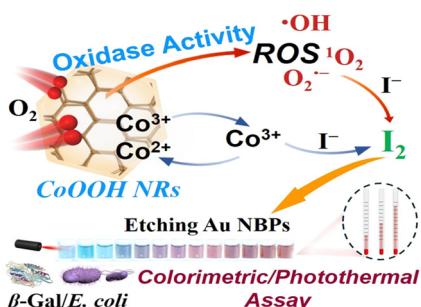
**Pd– $\text{CeO}_2/\text{C}$  nanocomposite derived from MIL-101(Al) for enhanced glycerol electrooxidation**

Nuoyan Li, Chi Zhang, Songlin Lei, Wei Hong,\* Shuguang Deng and Jun Wang\*



## COMMUNICATIONS

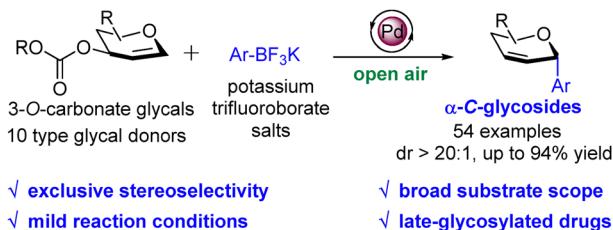
7863



**Two birds with one stone: colorimetric and photothermal dual-mode biosensor based on CoOOH nanorings for detecting  $\beta$ -galactosidase activity and *Escherichia coli***

Yong Qiong Wang, Jia Hui Liu, De Yan Li, Jin Zhang, Long Huang, Jian Mei Yang and Tong Yang\*

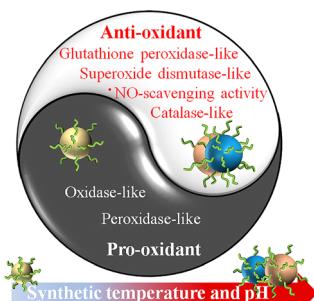
7867



**Stereoselective synthesis of C-glycosides from glycals and organotrifluoroborate salts**

Karwan Abdulmajed Othman, Yimin Xiang, Yue Wang, Nianyu Huang, Nengzhong Wang,\* Linxuan Li\* and Hui Yao\*

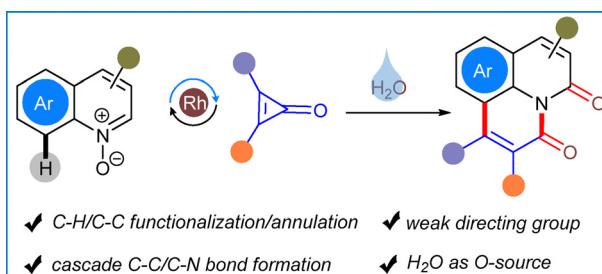
7871



**Extremes meet: changeover between pro- and antioxidant activities of Cu-based nanozymes**

Yuezhen He,\* Yan Chen, Xue Yang, Chuncan Song, Xianyong Shen, Shirui Ma, Jian Sun, Feng Gao\* and Lun Wang

7875



**Rh-catalyzed [3+3]-annulation of quinolines with cyclopropenones: access to functionalized 2-quinolones**

Bijoy Debnath, Santu Mandal, Sharajit Saha, Pallab Karjee and Tharmalingam Punniyamurthy\*

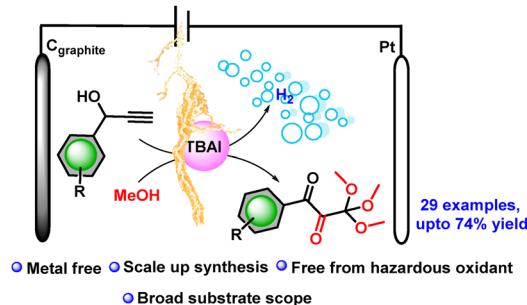


## COMMUNICATIONS

7879

**Electrochemical oxidation of propargyl alcohol: rapid access to an unprecedented dioxo-orthoester under mild conditions**

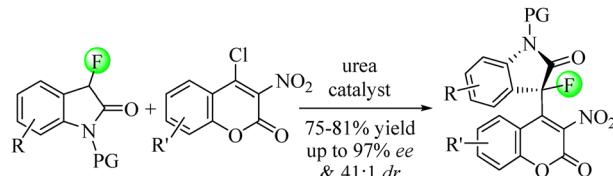
Sayan Bhadra, Manas Bandyopadhyay, Swastik Pathak, Jorge Escorihuela and Mrinal K. Bera\*



7883

**Organocatalytic atroposelective fluorooxindole addition to coumarin Michael acceptors**

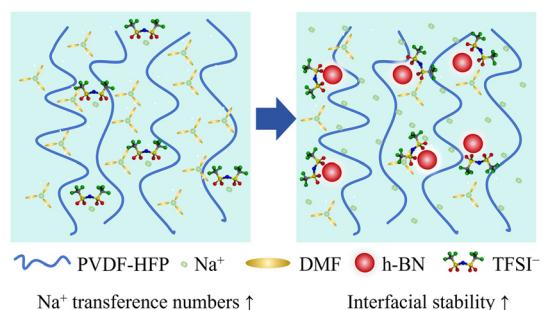
Maria Bouda, Grace E. Hana, Dea Xhili, Archita Sripada, Jeffery A. Bertke and Christian Wolf\*



7887

**A hexagonal-BN filler boosts the electrochemical performance of polymeric solid-state electrolytes for sodium–metal batteries**

Shuangwu Xu, Le Zhao, Zheting Liu, Huapeng Sun, Dan Sun, Zhiguang Peng,\* Yougen Tang, Wenyao Wang and Haiyan Wang\*



7891

**High voltage driven MnO<sub>2</sub>/CuO for efficient oxidation of 5-hydroxymethylfurfural**

Mengyang Yin, Hongliang Dai, Xi Chen, Weiqiang Fan\* and Hongye Bai\*

