

### IN THIS ISSUE

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#### Cover

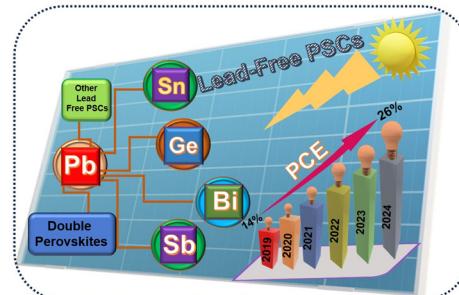
See Marius Haugland-Grange et al., pp. 6755–6758.  
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### FEATURE ARTICLES

6691

#### Lead-free perovskites for solar cell applications: recent progress, ongoing challenges, and strategic approaches

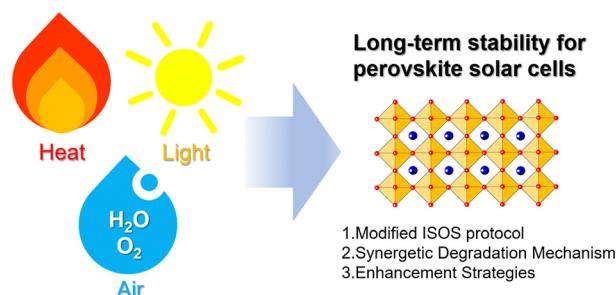
Imtiaz Ahmed, Kamal Prakash and Shaikh M. Mobin\*



6722

#### Protocols for degradation assessment and stability enhancement in perovskite solar cells

Seok Joo Yang,\* Sungwon Song, Chanui Park, Jinyeok Choi, Eunho Lee and Min Kim\*



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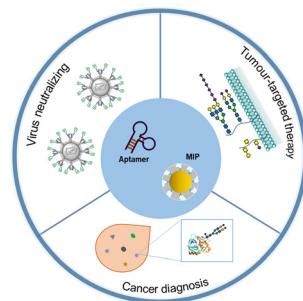
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## FEATURE ARTICLES

6739

## Advances in glycan-specific biomimetic molecular recognition and its biomedical applications

Wei Li and Zhen Liu\*

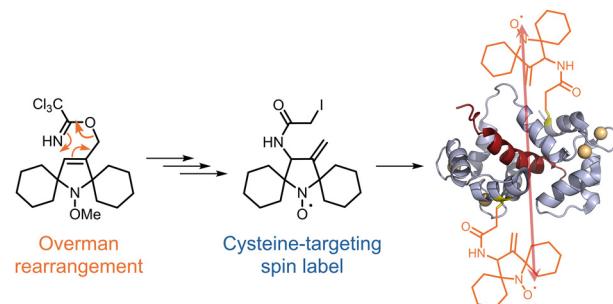


## COMMUNICATIONS

6755

## Sigmatropic rearrangement enables access to a highly stable spirocyclic nitroxide for protein spin labelling

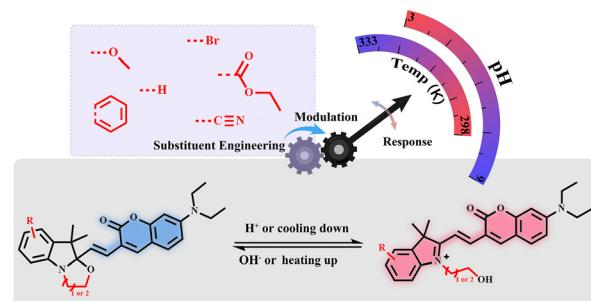
Mateusz P. Sowiński, Elena M. Mocanu, Hannah Ruskin-Dodd, Aidan P. McKay, David B. Cordes, Janet E. Lovett and Marius Haugland-Grange\*



6759

Oxazine-based molecular switches with finely tunable pH and temperature sensitivity *via* substituent engineering

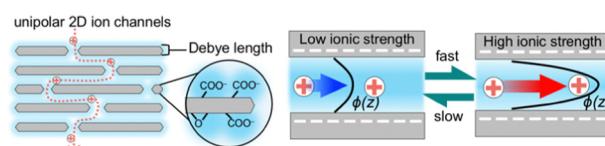
Chaofan Jin, Yuan Wang, Lu Wang, Xingjie Zan\* and Sicheng Tang\*



6763

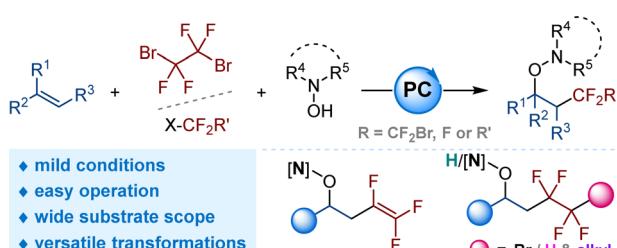
Programmable cation migration in unipolar 2D ion channels *via* dynamic Debye length

Yi-Lu Zhang, Shizhe Feng,\* Yumei Tan, Teng-Xuan Cao, Wangwang Ji, Rui Xie, Xiao-Jie Ju, Wei Wang, Da-Wei Pan, Zhuang Liu\* and Liang-Yin Chu



## COMMUNICATIONS

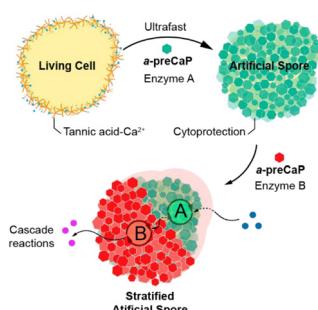
6767



### Visible-light organophotoredox-catalyzed fluoroalkyl aminoxylation of unactivated and activated alkenes

Jianhua Ji, Kangjie Li, Xiangzhu Zhou, Chun Xu, Die Zhang and Wen Shao\*

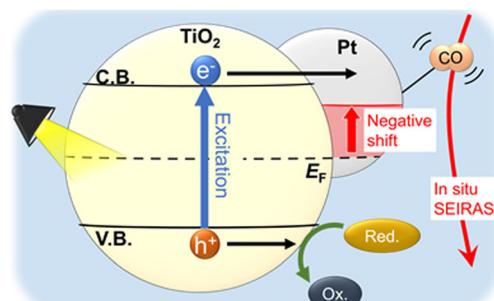
6771



### Ultrafast, cytocompatible mineralization of calcium phosphate in the formation of stratified nanoshells of artificial spores

Duc Tai Nguyen, Sang Yeong Han, Hyunwoo Choi, Nayoung Kim, Gulaim A. Seisenbaeva, Vadim G. Kessler and Insung S. Choi\*

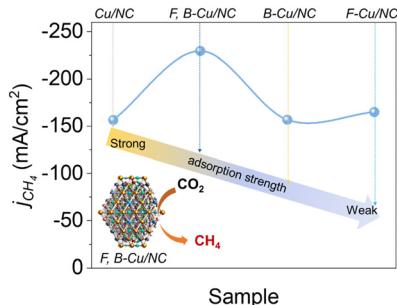
6775



### In situ SEIRAS analysis of enhanced photocatalytic carrier transfer to a Pt cocatalyst induced by sacrificial reagents

Shu Ashimura, Ota Mori, Reiya Konaka, Takuya Iwai, Chechia Hu, Ke-Hsuan Wang, Chien-Hsiang Chang, Yuh-Lang Lee and Masaaki Yoshida\*

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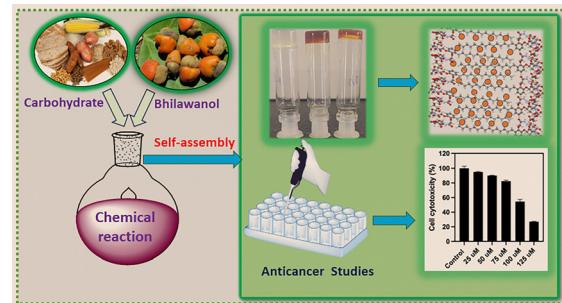
### F and B co-modification activated Cu/NC catalyst for enhanced electrocatalytic $CO_2$ reduction to $CH_4$

Tao Wang, Siyu Yi, Qiankang Zhang, Zhongqiu Wu, Jingman Yang, Mengxia Ji, Zhaolong Wang,\* Hui Xu\* and Xiaojie She\*



## COMMUNICATIONS

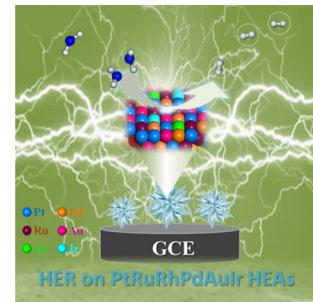
6783

**Easy access to a self-assembled glycolipid derived from bhilawanol: a promising anti-cancer drug**Tohira Banoo, Kajal Sandhu, S. Chockalingam and Subbiah Nagarajan\*  
Open Access Article. Published on 01 May 2025. Downloaded on 2/22/2026 5:51:04 PM.  
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6787

**An acanthosphere-like PtRuRhPdAulr high-entropy alloy as an efficient electrocatalyst for hydrogen evolution in both acidic and alkaline electrolytes**

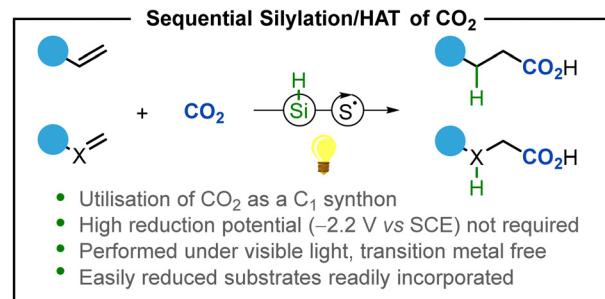
Cheng Chen, Wanwan Wu, Panyan Chen, Jiayin Guo, Heng Bian, Weiwei Li, Xinsheng Zhao\* and Lu Wei\*



6791

**Photocatalytic reductive incorporation of carbon dioxide into double bonds**

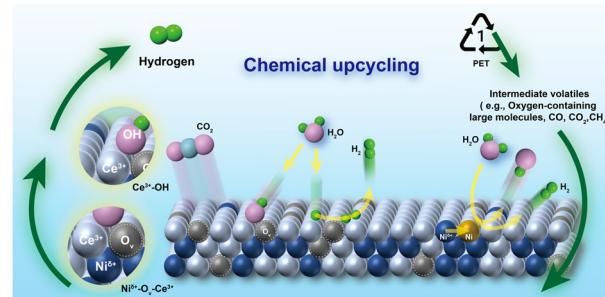
Mark J. Deeprose\* and Thorsten Bach\*



6795

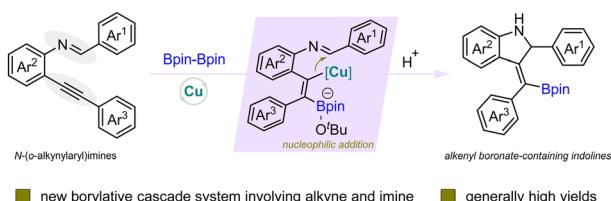
**A dual-active  $\text{NiO}-\text{Ce}_{1-x}\text{Ni}_x\text{O}_2$  nanocomposite for catalytically upcycling PET into  $\text{H}_2$** 

Jin Wang, Fangqi Liu, Chun Shan, Jiarui Zhu, Zengjian Guo, Xuesong Zhang\* and Lujia Han



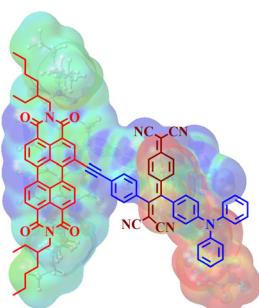
## COMMUNICATIONS

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**Cu-catalyzed borylative cyclization of *N*-(*o*-alkynylaryl)imines**

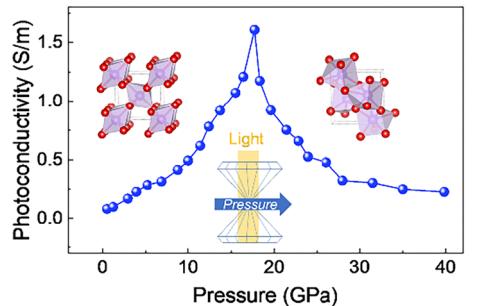
Tingting Zhang, Jinhai Gui, Yu Mo, Yuchuan Pu, Hongping Zhao, Yong Liu\* and Chengyu He\*

6803

**Perylenediimide promoted charge transfer in tetracyano butadiene-triphenylamine (TCBD-TPA) and expanded-tetracyano butadiene-triphenylamine (DCNQ-TPA) push-pull conjugates**

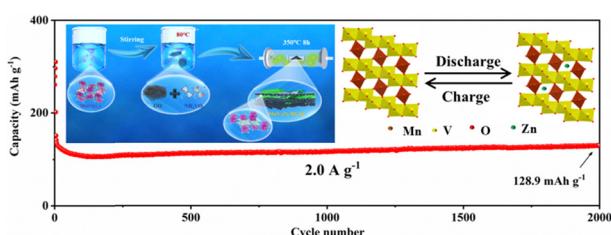
Mohd Wazid, Yogajivan Rout, Ajyal Z. Alsaleh, Ram R. Kaswan, Rajneesh Misra\* and Francis D'Souza\*

6807

**The pressure-induced photoconductivity enhancement of black-TiO<sub>2</sub>**

Bingyan Liu, Tianfeng Duan, Songhao Guo, Kejun Bu, Jiabing Luo, Yiming Wang, Junxiu Liu, Wenge Yang, Jun Zhang\* and Xujie Lü\*

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**Insights into the enhanced electrochemical performance and energy storage mechanism of a manganese vanadate cathode for rechargeable aqueous zinc ion batteries**

Hong Liu, Litao Han, Chen Lu,\* Shi Tao, Fanjun Kong\* and Bin Qian

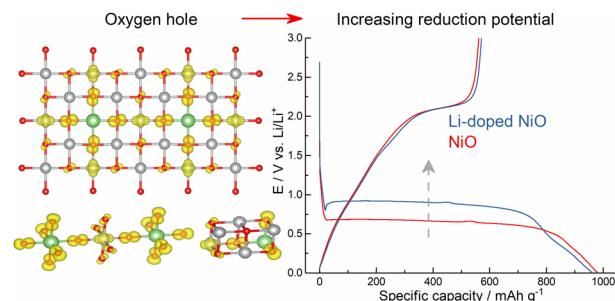


## COMMUNICATIONS

6815

**Oxygen hole states facilitated cleavage of Ni–O bonds in the rock-salt phase of a conversion-type anode**

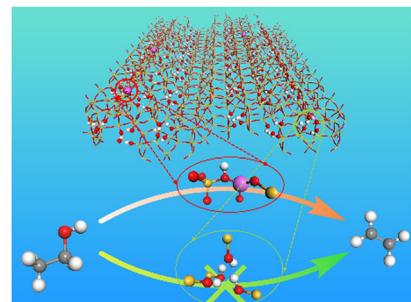
Shengnan Sun,\* Jun Zhou, Debbie Hwee Leng Seng, Hui Ru Tan, Shibo Xi, Xiping Ni, Fengxia Wei, Poh Chong Lim, Ming Lin, Yi Ren, Shijie Wang\* and Zhi Wei Seh\*



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**Is trace-level aluminum in zeolite matrix catalytically inert? A case study of alcohol dehydration in dealuminated beta zeolite**

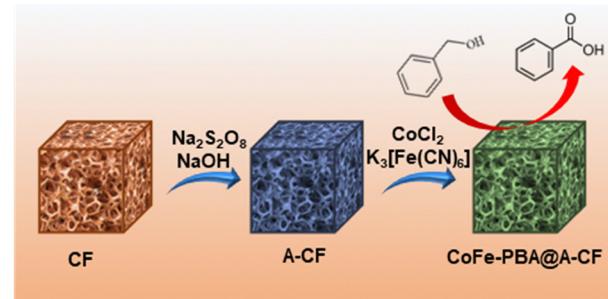
Haoxi Jiang, Jiahao Guan, Changdong Li, Lingtao Wang and Guochao Yang\*



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**Prussian blue analogue heterointerface on a pre-oxidized copper foam surface for enhanced anodic oxidation performance**

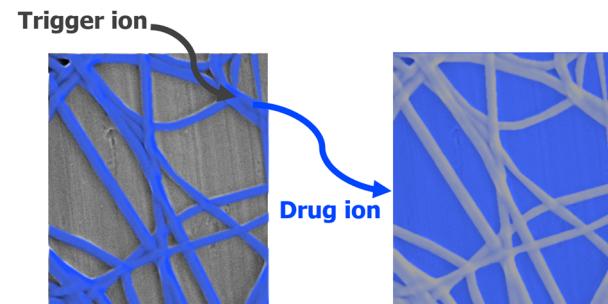
Ayusie Goyal, Shalini Verma, Labham Singh, Baghendra Singh\* and Apparao Draksharapu\*



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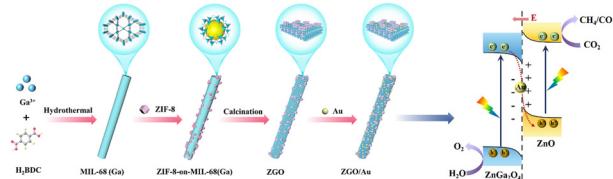
**Towards drug delivery systems triggered by ion-selective interactions**

Dorota Buczyńska, Emilia Stelmach, Justyna Kalisz, Bohdan Paterczyk, Piotr Piątek, Krzysztof Maksymiuk and Agata Michalska\*



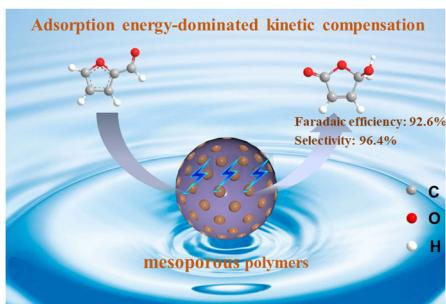
## COMMUNICATIONS

6831

Heterojunction constructed from ZIF-8-on-MIL-68(Ga) precursor for photocatalytic  $\text{CO}_2$  reduction

Yu Ma, Qingqing Jiang,\* Xingyu Li, Hao Yu, Xiaole Han, Yi Liu, Qin Li, Kangle Lv and Juncheng Hu\*

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## Mechanistic insights into biomass-based furfural electrooxidation to 5-hydroxy-2(5H)-furanone over mesoporous polymers

Weixia Zhu, Runlu Yang, Xin Wang, Keying Dai, Chang Su, Jiaxi Duan, Chun Chang and Haoran Wu\*

