

# Chem Soc Rev

Chemical Society Reviews

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## IN THIS ISSUE

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### Cover

See Gary F. Moore *et al.*, pp. 3737–3765. Image reproduced by permission of Gary F. Moore from *Chem. Soc. Rev.*, 2026, 55, 3737. Artwork by Jason Drees.



### Inside cover

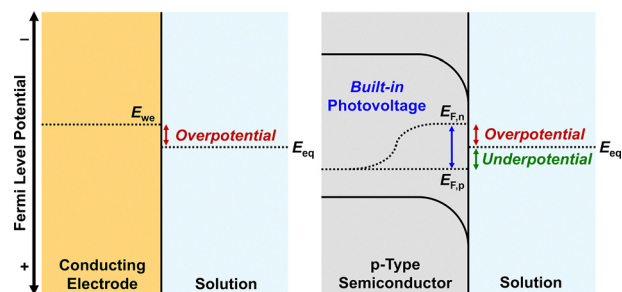
See Mozaffar Abdollahifar, Rainer Adelung *et al.*, pp. 3834–3930. Image reproduced by permission of Mozaffar Abdollahifar, Erik Greve, Jonas Lumma and Rainer Adelung from *Chem. Soc. Rev.*, 2026, 55, 3834.

## TUTORIAL REVIEWS

3737

### Shedding light on overpotentials and underpotentials in (photo)electrochemical reactions

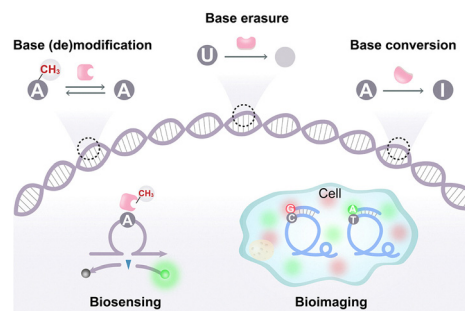
Daiki Nishiori, Edgar A. Reyes Cruz, Lillian K. Hensleigh, Nghi P. Nguyen and Gary F. Moore\*



3766

### High-performance bioimaging and biosensing via nucleobase-editing enzymes

Ruomeng Li, Longyingzi Xie, Xucong Teng, Fuan Wang\* and Jinghong Li\*



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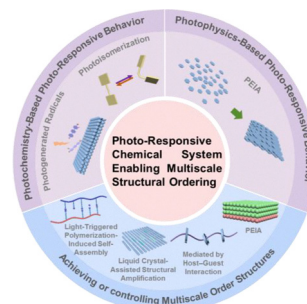
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## TUTORIAL REVIEWS

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## Photo-responsive chemical systems enabling multiscale structural ordering

Jianshuo Cheng, Mouwei Liu and Liangliang Zhu\*



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## Machine learning-driven molecular engineering of nucleic acids

Qien Shi, Hui Lv, Fei Wang, Chunhai Fan\* and Mingqiang Li\*

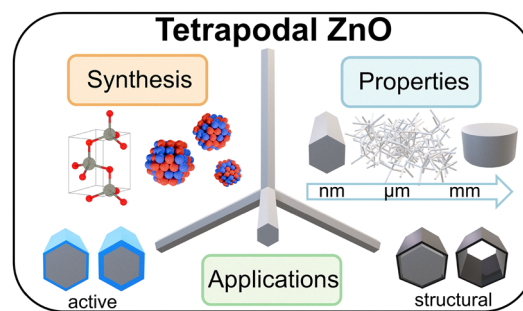


## REVIEW ARTICLES

3834

## Functional tetrapodal zinc oxide: from synthesis and multiphysics to advanced applications

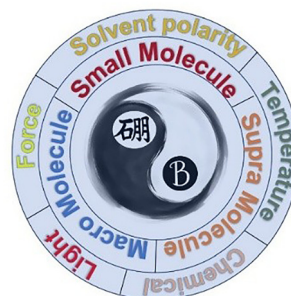
Mozaffar Abdollahifar,\* Erik Greve, Jonas Lumma and Rainer Adelung\*



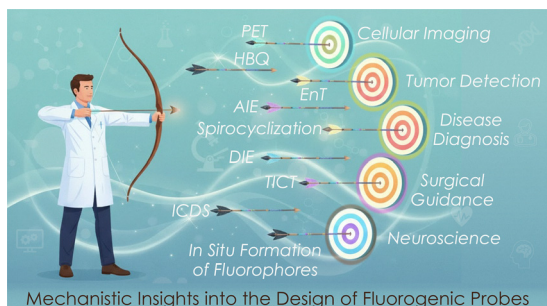
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## Recent research progress on organoboron-based stimuli responsive materials

Zhiyu Jia,\* Yue Gao, Tongtong Zhang and Nan Wang\*



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### Mechanistic insights into the design of fluorogenic molecules for wash-free biological applications

Rongrong Huang, Syed Ali Abbas Abedi, Guanyu Jiang, Chao Wang, Lingya Peng, Tianruo Shen, Nabil Mroweh, Yu Fang and Xiaogang Liu\*

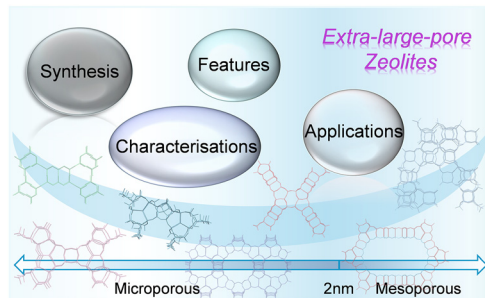
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### Surface-initiated living crystallization-driven self-assembly: from precision nanofabrication to functional interfaces

Jiawei Tao,\* Yao Lu, Chenchen Gao, Peiwen Wang, Zhenyan Ji, Sen Lv, Xiaomin Cai, Jingwen Zhang and Huibin Qiu\*

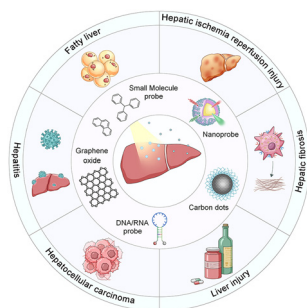
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### Molecularly engineered zeolites with extra-large-pore architectures and functional opportunities

Haimeixu, Xinwei Guan, Lu Lin, Yuanshuai Liu,\* Zhihao Lei, Xiaoning Li, Shuaiyu Jiang, Zijun Yong, Yibo Ma, Wenping Sun, Hongge Pan, Baohua Jia, Valentin Valtchev\* and Tianyi Ma\*

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### Rational design of fluorescent imaging agents for hepatic diseases: from molecular mechanisms to diagnostic precision

Yuantao Mao, Wen Zhang, Xin Wang,\* Ping Li\* and Bo Tang\*

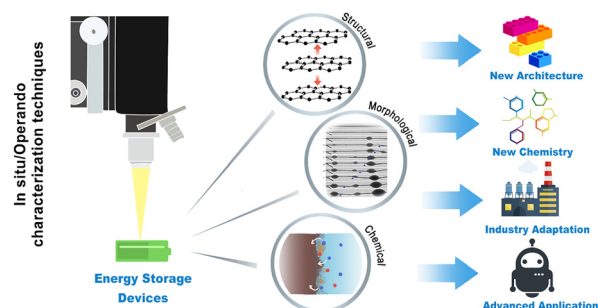


## REVIEW ARTICLES

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### Fundamental understanding of electrochemical energy storage devices *via in situ* or *operando* characterization

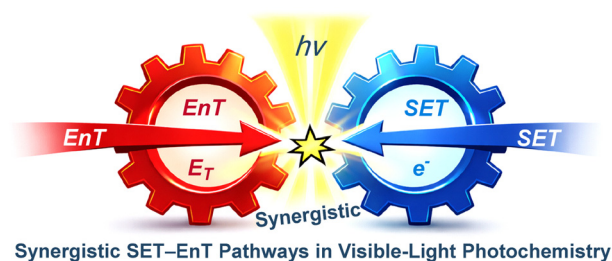
Prattek Das, Jiaxin Ma, Zhong-Shuai Wu\* and Hui-Ming Cheng\*



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### Beyond single pathways: synergistic SET–EnT pathways in visible-light photochemistry

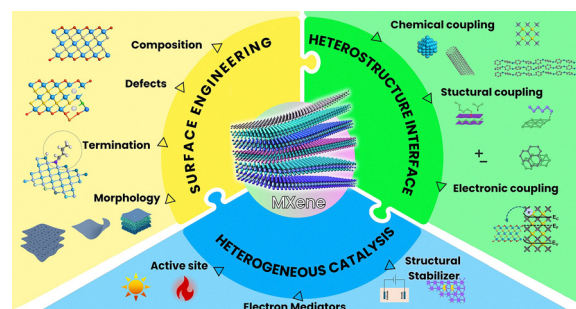
Bao-Gui Cai, Qiang Wang, Jun Xuan\* and Wen-Jing Xiao\*



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### Engineering MXene surfaces and heterostructure interfaces for efficient heterogeneous catalysis

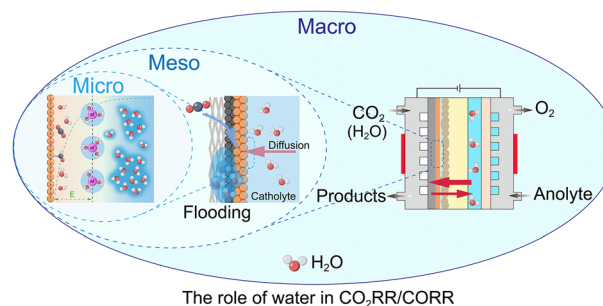
Liang Tian, Feiyan Xu,\* German Sastre, Ana Primo, Jianguo Yu and Hermenegildo Garcia\*



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### Multi-scale roles of water in electrocatalytic CO<sub>2</sub> and CO reduction

Xiaoyang He, Weiwen Zhou, Junxiong Chen, Qinghong Zhang, Ye Wang and Shunji Xie\*



## CORRECTION

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**Correction: Functionalization of *o*-carboranes via carboryne intermediates**

Zaozao Qiu and Zuowei Xie\*

