

## IN THIS ISSUE

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### Cover

See Daigo Miyajima, Go Watanabe *et al.*, pp. 4951–4954. Image reproduced by permission of Go Watanabe from *Chem. Commun.*, 2025, 61, 4951.



### Inside cover

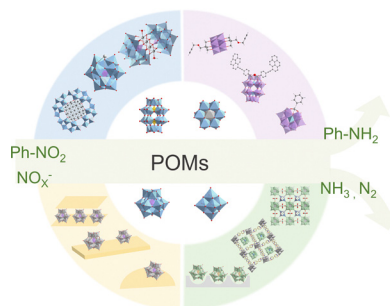
See Tamaki Yano and Ryosuke Masuda *et al.*, pp. 4955–4958. Image reproduced by permission of Tamaki Yano from *Chem. Commun.*, 2025, 61, 4955.

## HIGHLIGHT

4881

### Polyoxometalates for the catalytic reduction of nitrogen oxide and its derivatives: from novel structures to functional applications

Yuan Jiang, Chun-Jun Chen, Ke Li, Li-Ping Cui and Jia-Jia Chen\*

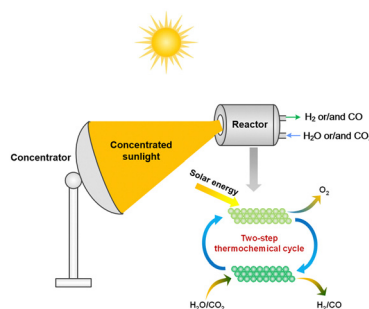


## FEATURE ARTICLES

4897

### Two-step thermochemical cycle for solar fuel production from H<sub>2</sub>O and CO<sub>2</sub>: technological challenges and potential solutions

Linyang Wei, Zhefei Pan\* and Liang An\*



# Environmental Science: Atmospheres

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Fundamental questions  
Elemental answers

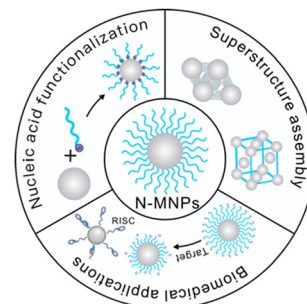


## FEATURE ARTICLES

4904

## Recent advances in nucleic acid-functionalized metallic nanoparticles

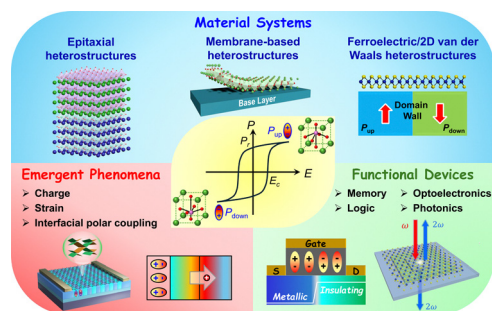
Lei Ren, Shuting Cao, Linjie Guo, Jiang Li, Kai Jiao\* and Lihua Wang\*



4924

## Interface phenomena and emerging functionalities in ferroelectric oxide based heterostructures

Yifei Hao, Tianlin Li and Xia Hong\*

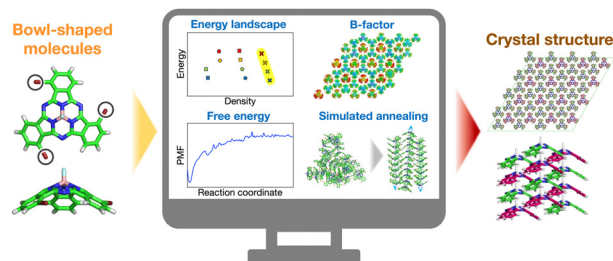


## COMMUNICATIONS

4951

Molecular dynamics simulation to predict assembly structures of bowl-shaped  $\pi$ -conjugated molecules

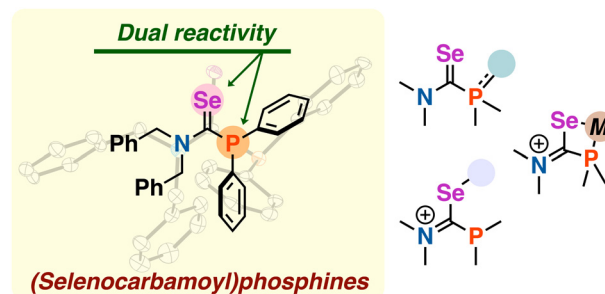
Shunsuke Sato, Barun Dhara, Dan He, Daigo Miyajima\* and Go Watanabe\*



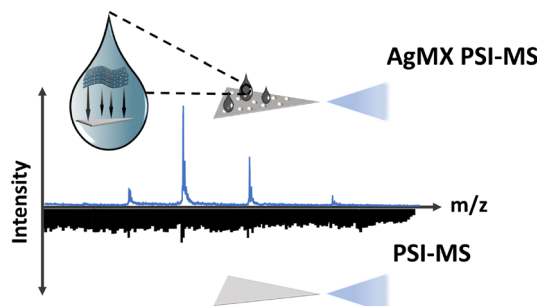
4955

## Selenoamides with two reactive sites: synthesis, structures, and dual reactivity of (selenocarbamoyl)phosphines

Ryosuke Masuda,\* Tamaki Yano and Hiroyuki Kusama\*



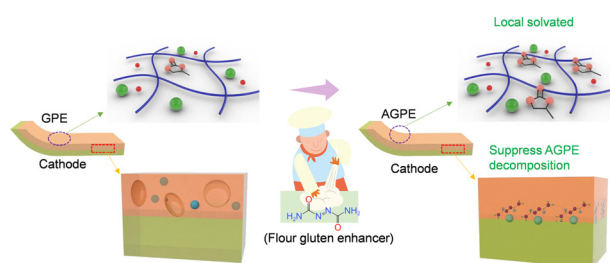
4959



### Synergistic effect of Ag/MXene for efficient protein ionization in paper spray mass spectrometry

Lulu Yu, Yiqiu Wei, Yajuan Lei, Ziyi He, Guanyu Lu, Lingpeng Zhan and Peiqi Luo\*

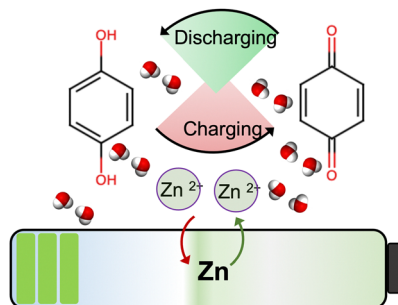
4963



### Designing interfacially stable Na-ion polymer electrolytes with tailored local solvation structures

Jun Pan, Xinran Gao, Yanhong Liu, Okkyun Seo, Rosantha Kumara, Yuwei Liu, Takeshi Watanabe, Bing Zhu, Zhongchao Bai, Shixue Dou, Nana Wang\* and Dongshuang Wu\*

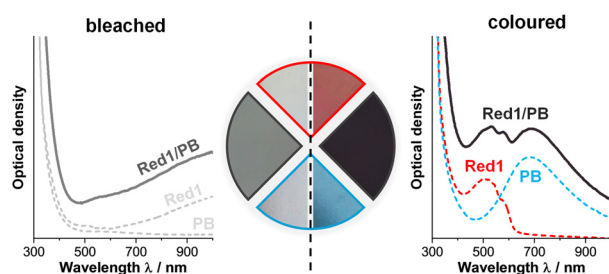
4967



### Micropore confinement for a highly rechargeable aqueous Zn-hydroquinone battery with exceptional capacity

Mohamed H. Alkordj,\* Ahmed B. Soliman, Eman Wahid, Aya Ali, Reham Shams-Eldin and Alexei Nefedov

4971



### Combining broadband absorbing electrochromic materials for hybrid grey-to-colourless flexible devices

Lukas Niklaus, Rúben R. Ferreira, Sven Macher, Antoine Stopin, Marco Schott,\* Laura Maggini\* and Davide Bonifazi

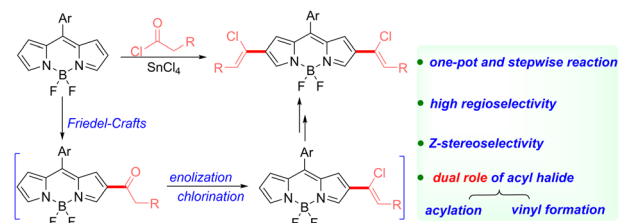


## COMMUNICATIONS

4975

## A cascade strategy for vinyl chloride-substituted BODIPYs with tunable photophysical properties

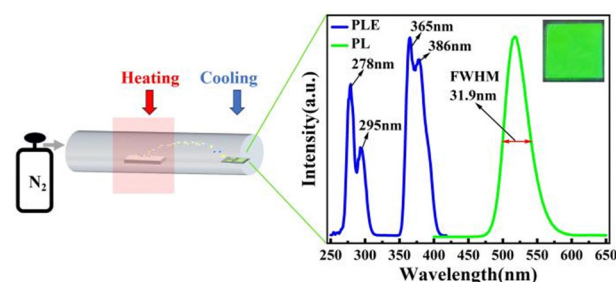
Fan Lv, Xing Guo, Shuangshuang Zhu, Sen Huang, Li Li, Shaozhen Wang,\* Lijuan Jiao\* and Erhong Hao\*



4979

Green synthesis of ultra-bright  $\text{Cs}_3\text{MnBr}_5$  films by a CVD method

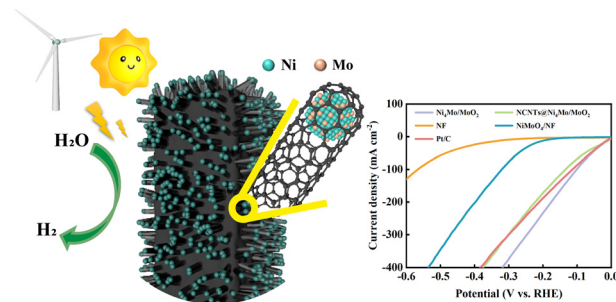
Shu Li, Chuanhe Ma, Fushuai Li, Jinchun Jiang and Hailong Wang\*



4983

 $\text{Ni}_4\text{Mo}$  nanoparticles embedded in N-doped carbon nanotubes growing on  $\text{Ni}_4\text{Mo}/\text{MoO}_2$  micropillars for durable hydrogen evolution

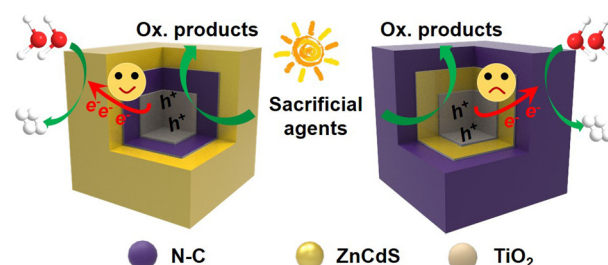
Lili Zhou, Zemin Zhao, Ao Xie, Rufe Zhang, Linting Cheng, Jia Liu, Hua Zhou, Yongmei Chen, Pingyu Wan and Yang Tang\*



4987

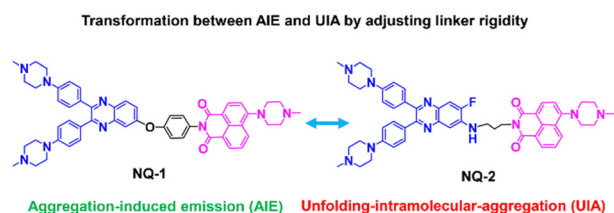
A regulated  $\text{TiO}_2@\text{NC}@\text{ZCS}$  photocatalyst for efficient hydrogen evolution: insights into the role of carbon layer positioning

Guoxiang Zhang, Guangwen Fu, Tiaolong Lv, Wei Liu, Xiguang Han\* and Jianjian Yi\*



## COMMUNICATIONS

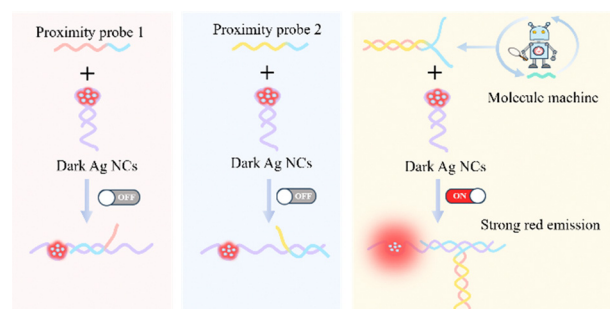
4991



### AIE and UIA-featured fluorescent ligands for G-quadruplex: the impact of linker rigidity between recognition moiety and fluorophore

Rui Wang and Ming-Hao Hu\*

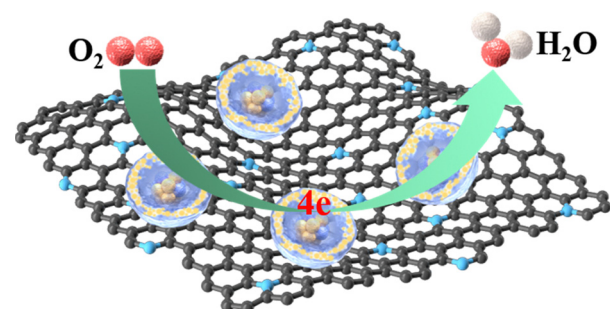
4995



### Proximity-induced DNA Ag NC enhancement with a DNA-fueled molecule machine for lung cancer-associated miRNA detection

Yiting Lan, Ruirui Chang, Wei Zhang, Dengxue Qiu, Chengtong Liang, Jin Huang,\* Qin Xu\* and Jing Li\*

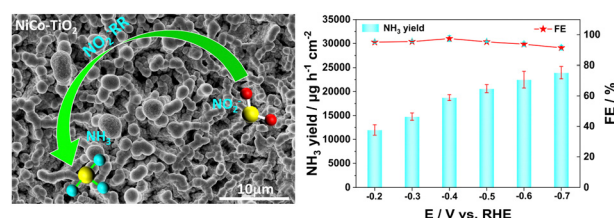
4999



### A facile approach for synthesizing nitrogen-doped carbon supported circular trough-shaped FeCo alloy for the oxygen reduction reaction

Kun Yang, Jing Liu,\* Bin Li, Zhicheng Xu, Xiang Ji, Xinchun Yang\* and Jianping Long\*

5003



### A NiCo alloy particle-decorated TiO<sub>2</sub> nanoarray as an efficient electrocatalyst for nitrite reduction to ammonia

Zhaofei Ren, Baofang Zhao, Qiuyue Chen, Lisi Xie,\* Jing Zhang, Xuguang An, Qian Liu, Xiaolei Li, Weitang Yao and Qingquan Kong\*

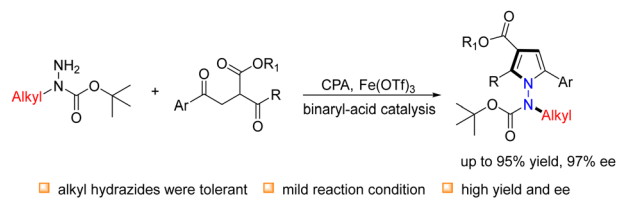


## COMMUNICATIONS

5007

### Atroposelective synthesis of N–N axially chiral pyrrolylamides by combined-acid catalytic Paal–Knorr reaction

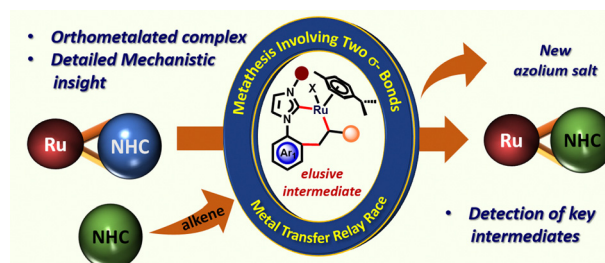
Zhihuang Chen, Qi Chen, Guogang Tu and Xiaodong Xiong\*



5011

### Alkene-promoted NHC ligand substitution in orthometalated Ru–NHC complexes via $\sigma$ -bond metathesis: a mechanistic insight

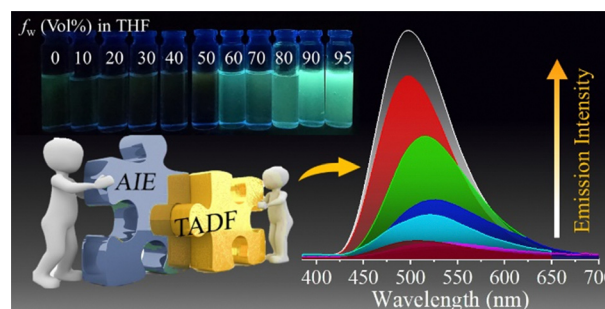
Arya Ramachandran, Somnath Bauri and Arnab Rit\*



5015

### Regulation of aggregation-enhanced thermally activated delayed fluorescence in butterfly-shaped donor–acceptor conjugates

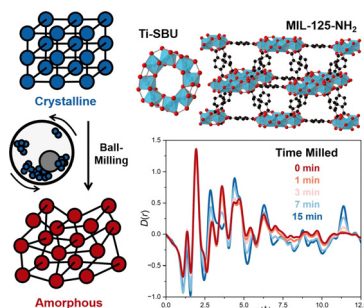
Manoj Upadhyay and Debdas Ray\*



5019

### Structural insights of mechanochemically amorphised MIL-125-NH<sub>2</sub>

E. V. Shaw, C. Castillo-Blas,\* T. Lambden, B. de Santos, B. Turner, G. I. Lampronti, J. E. M. Laulainen, G. P. Robertson, A. M. Chester, C. Ye, S. Guan, J. K. G. Karlsson, V. Martinez, I. Brekalo, B. Karadeniz, S. Cabrera, L. N. McHugh, K. Užarević, J. Alemán, A. Fraile, R. C. Evans, P. A. Midgley, D. A. Keen, X. Moya and T. D. Bennett\*



José L. Belmonte-Vázquez, Juan L. Cortes-Muñoz,  
Adriana Romo-Pérez, Braulio Rodríguez-Molina\* and  
Arturo Jiménez-Sánchez\*

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Adriana Romo-Pérez, Braulio Rodríguez-Molina\* and  
Arturo Jiménez-Sánchez\*

Haozhe Geng, Senhe Huang, Zhenyu Zhang,\*  
Sheng Han,\* Rongrong Miao, Jinhui Zhu\* and  
Xiaodong Zhuang

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Sheng Han,\* Rongrong Miao, Jinhui Zhu\* and  
Xiaodong Zhuang

The diagram illustrates the CRISPR-Cas9 system. It begins with a DNA template containing a protospacer flanked by two direct repeats. This is transcribed into a pre-crRNA, which is then processed into a crRNA. The crRNA is loaded into a Cas9 protein, forming a crRNA-Cas9 complex. This complex then targets a specific DNA sequence, leading to a double-strand break. The final product is a mature Cas9 protein bound to the crRNA.

## Jinping Hu, Jie Zhang, Juan Hu\* and Chun-yang Zhang\*

Jinping Hu, Jie Zhang, Juan Hu\* and Chun-yang Zhang\*

5035

Luis F. Sánchez-Barba,\* Andrés Garcés,\* Agustín Lara-Sánchez,\* Marta Navarro and David González-Lizana

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