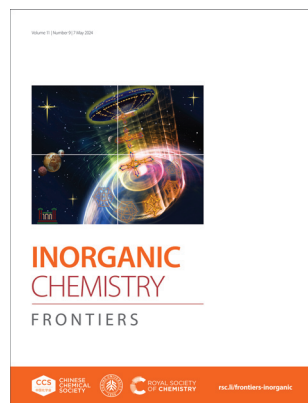


### IN THIS ISSUE

ISSN 2052-1553 CODEN ICFNAW 11(9) 2511-2808 (2024)



#### Cover

See Jian-Hua Jia *et al.*,  
pp. 2553–2561.

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2024, **11**, 2553.

### PROFILE

2521

#### Contributors to the *Inorganic Chemistry Frontiers* Emerging Investigator Series 2022–2023

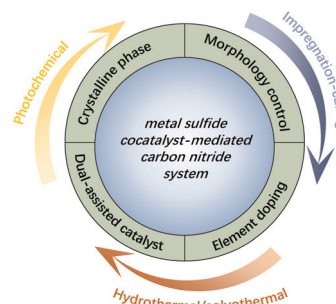


### REVIEW

2527

#### Recent progress on the photocatalytic hydrogen evolution reaction over a metal sulfide cocatalyst-mediated carbon nitride system

Xunhuai Huang, Junpeng Song, Guanyu Wu,  
Zhihuan Miao, Yanhua Song\* and Zhao Mo\*



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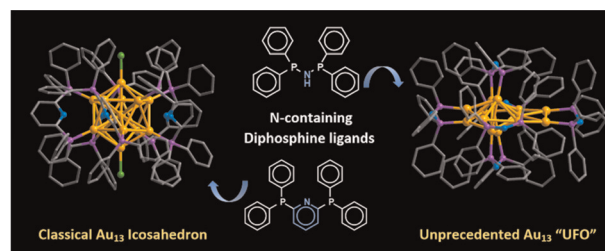


## RESEARCH ARTICLES

2553

### Tailoring two magic number Au<sub>13</sub> nanoclusters with N-containing diphosphine ligands: a classical icosahedral core vs. an unprecedented UFO-shaped core

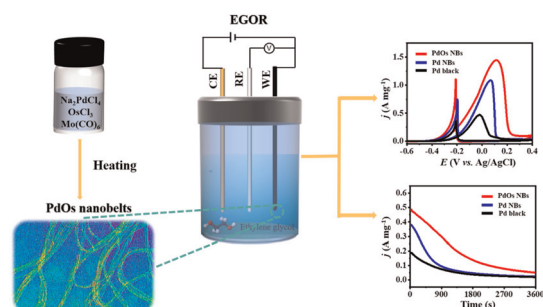
Jing Liu, Jia-Chuan Liu, Hai-Ling Wang, Pei-Yu Liao, Jian-Hua Jia\* and Ming-Liang Tong



2562

### Defect-rich Pd@PdOs nanobelts for electrocatalytic oxidation of ethylene glycol

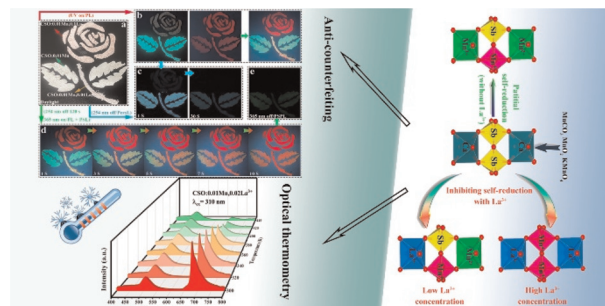
Xianlong Wang, Xuewen Wei, Ruifan Zhang, Min Yan, Ranran Wei, Xiaoying Zhang, Zhaoyou Zhu, Yinglong Wang, Xinling Zhao and Shuli Yin\*



2570

### Modulating Mn self-reduction and multimodal luminescence in CaSb<sub>2</sub>O<sub>6</sub> through La<sup>3+</sup> doping for quadruple-mode dynamic anti-counterfeiting and optical temperature sensing applications

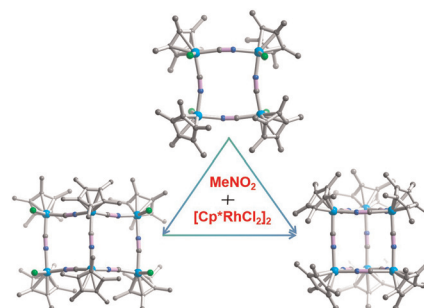
Fenzhong Long, Lu Xie, Jiawei Fu, Kaian Shan, Huihui Fei and Xinmin Zhang\*



2590

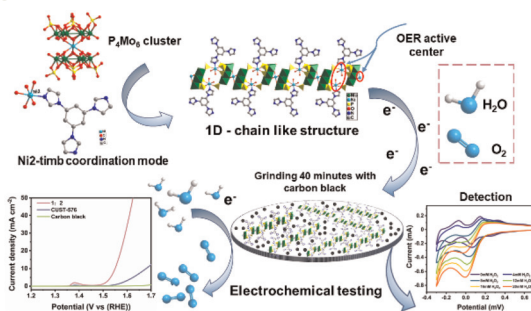
### An unusual reaction in nitromethane solution: use of the Cp\*Rh moiety to form Prussian blue analogues

Huirong Ma, Liangchen Liu, Yuluan Liao, Huatian Shi, Po Sun\* and Weibin Yu\*



## RESEARCH ARTICLES

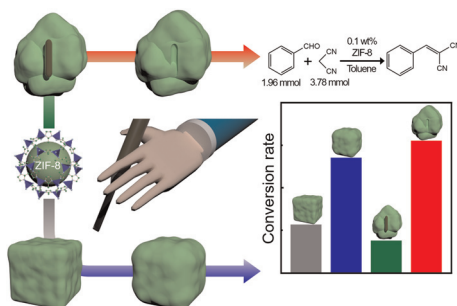
2598



### An hourglass-shaped nickel-based polyoxometalate crystalline material as a highly efficient bifunctional electrocatalyst for the oxygen evolution reaction and detection of H<sub>2</sub>O<sub>2</sub>

Yajie Li, Na Zhu, Zhixuan Su, Xiaoli Hu,\* Zhiyu Dou\* and Zhongmin Su\*

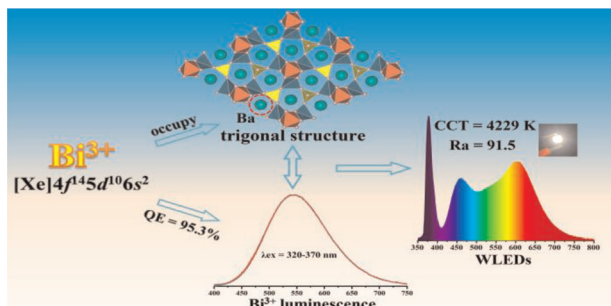
2608



### Harnessing nanoscale spatial effects in inner-modified zeolitic imidazolate framework-8 for enhanced Knoevenagel condensation reaction

Semi Kim, Seojeong Woo, Cheongwon Bae, Yuri Jeon, Yeeun Seong, Song Li and Juyeong Kim\*

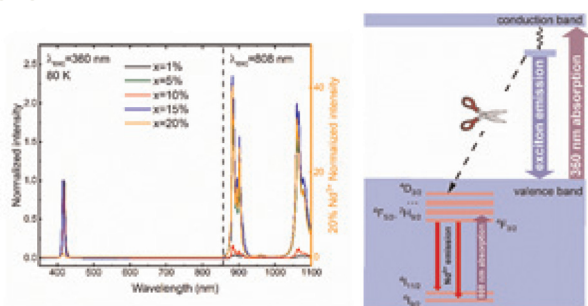
2616



### Crystal structure, Bi<sup>3+</sup> yellow luminescence, and high quantum efficiency of Ba<sub>3</sub>SbAl<sub>3</sub>Ge<sub>2</sub>O<sub>14</sub>:Bi<sup>3+</sup> phosphor for white light-emitting diodes

Huihui Fei, Baolong Jing, Jin Han,\* Kaiyan Shan, Dongming Cheng, Xueqing Xu,\* Xinmin Zhang and Jing Wang\*

2626



### Synthesis and characterization of a CsPbCl<sub>3</sub> perovskite doped with Nd<sup>3+</sup>: structural, optical, and energy transfer properties

Mariusz Stefanski,\* Bartosz Bondzior, Adam Basinski, Maciej Ptak, Bibo Lou and Chong-Geng Ma

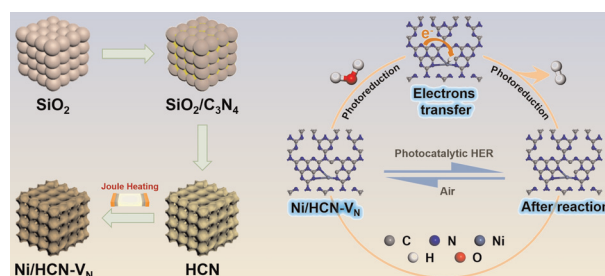


## RESEARCH ARTICLES

2634

### Rapid Joule heating synthesis of Ni doped into porous honeycomb $C_3N_4$ with greatly improved photocatalytic $H_2$ production

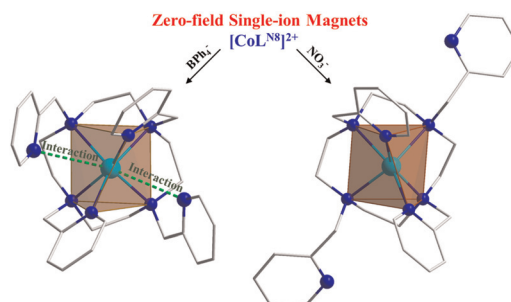
Zehui Zhao, Guangmin Ren, Zisheng Zhang, Xiangchao Meng and Zizhen Li\*



2648

### Effects of weak intramolecular interactions and distortions from trigonal prismatic coordination on the magnetic properties of zero-field Co(II) single-ion magnets

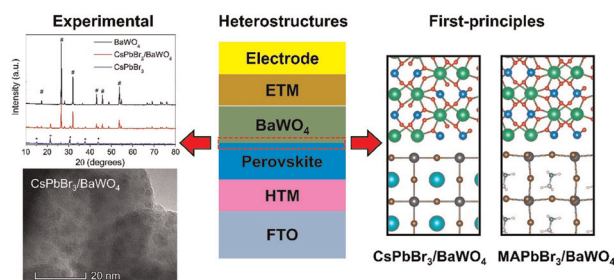
Ben Zhang, Yang Zhou, Hao-Yi Huang, Xiao-Le Zhang, Yi Xiang, Yanbo Shi, Chennan Zhang, Aihua Yuan, Xingwei Cai, Lei Chen,\* Yi-Quan Zhang\* and Zhao-Bo Hu\*



2661

### Adhesion, stability, structural and electronic properties of perovskite/ $BaWO_4$ heterostructures: first-principles and experimental characterizations

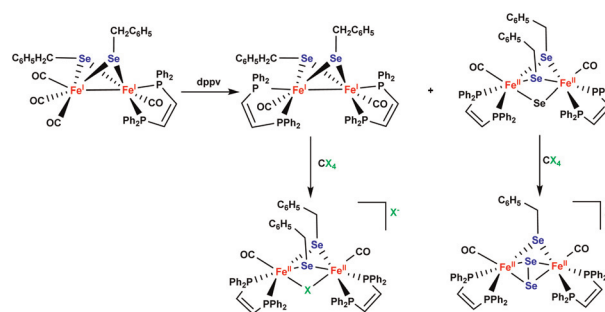
Yao Guo, Shiding Zhang,\* Zhaoyu Zhang, Yuanbin Xue, Jianxin Li, Haixiang Song, Yuhua Wang\* and Qing Shen\*



2672

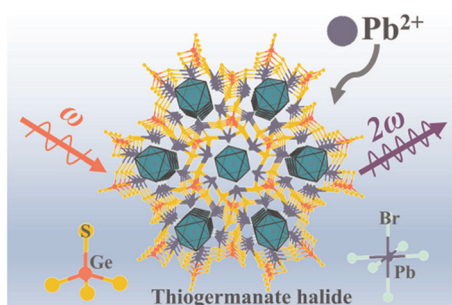
### Facile access to tetra-substituted $Fe^{II}Fe^{II}$ biomimetics for the oxidized state active site of [FeFe]-hydrogenases

Xin-Ping Gao, Shu-Fen Bai, Yan-Lan Wang, Shuang Lü\* and Qian-Li Li\*



## RESEARCH ARTICLES

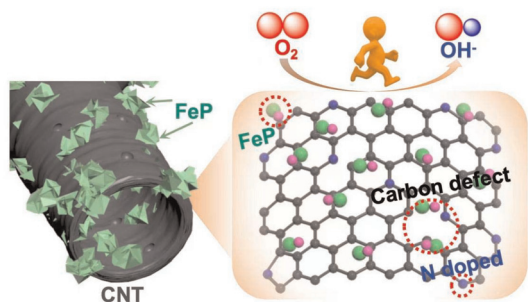
2681



### $\text{Pb}_{3.5}\text{GeS}_4\text{Br}_3$ : the first phase-matching thio germanate halide infrared nonlinear optical material

Jiazheng Zhou, Hongshan Wang, Junjie Liu, Xin Su, Yu Chu,\* Jiale Qu\* and Xiangzhan Jiang\*

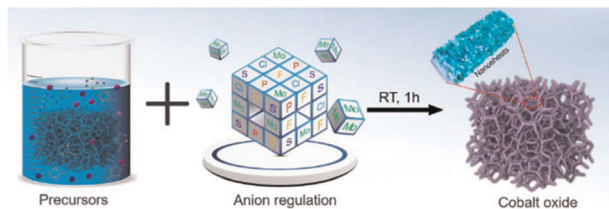
2690



### $\text{NH}_3$ plasma-etching-derived porous N-doped carbon nanotubes with FeP nanoparticles and intrinsic carbon defects for boosting oxygen reduction in rechargeable Zn–air batteries

Bing Chen, Minjie Zhou,\* Na Zhang, Xianglin Deng and HaiHua Yang\*

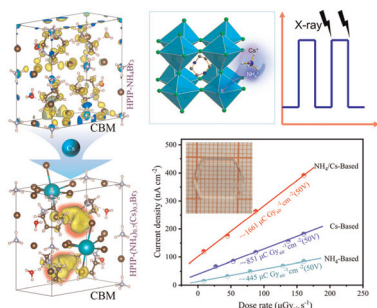
2702



### Large-scale fabrication of ZIF-derived electrocatalysts for industrial oxygen evolution

Liangjun Chen, Zhuowen Huangfu, Xuelin Yang, Hang Lei,\* Zilong Wang\* and Wenjie Mai

2709



### Synergistic role of hydrogen bonding and band degeneracy leads to enhanced X-ray detection in $\text{HPIP}-(\text{NH}_4)_{0.7}\text{Cs}_{0.3}\text{Br}_3 \cdot \text{H}_2\text{O}$ perovskites

Pengxiang Dong, Chensheng Lin, Xin Zhao, Yicong Lv, Ning Ye and Min Luo\*



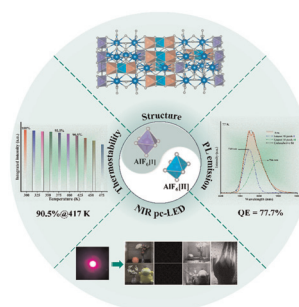


## RESEARCH ARTICLES

2718

### Rational design for broad near-infrared emission from a two-sited $\text{Rb}_2\text{LiAlF}_6:\text{Cr}^{3+}$ phosphor with high efficiency and thermal stability for spectroscopic applications

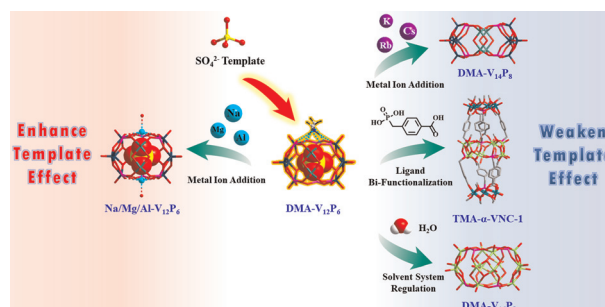
Song Qing, Jing Wan, Tao Yang, Qiang Zhou,\*  
Yayun Zhou, Zhengliang Wang,\* Dawei Wen and  
Mingmei Wu\*



2726

### Controlling the structural and adsorption features of polyoxovanadate-based metal-organic clusters by adjustable template effect

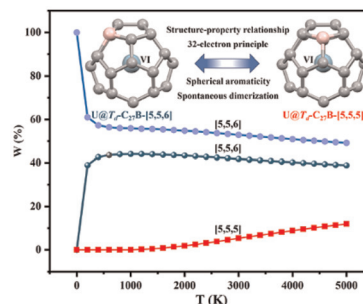
Yan-Hu Wang, Ke-Wei Tong, Chao-Qin Chen, Jing Du,  
Guo-Ping Yang and Peng Yang\*



2735

### The smallest endohedral borafullerene: structural isomerization, electronic properties, aromaticity and reactivity of $\text{U@C}_{27}\text{B}$

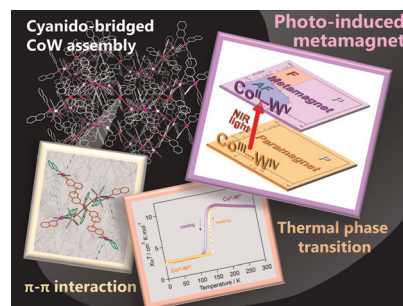
Xinde Li, Lei Lou and Peng Jin\*



2752

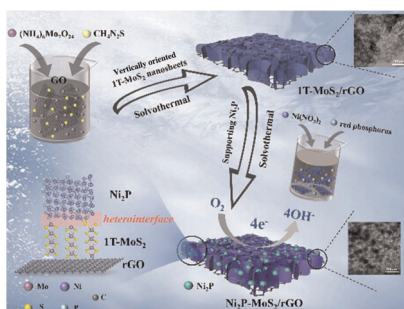
### Near-infrared-photoinduced metamagnet based on a layered cyanido-bridged Co-W assembly with $\pi-\pi$ interactions

Kazuki Nakamura, Koji Nakabayashi,\* Shota Kobayashi  
and Shin-ichi Ohkoshi\*



## RESEARCH ARTICLES

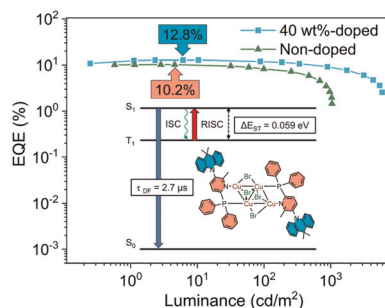
2763



### Integrating multiple regulatory strategies: phase, morphology and interface engineering to construct a hierarchical Ni<sub>2</sub>P–MoS<sub>2</sub>/rGO heterostructure catalyst for efficient oxygen reduction reaction

Xinyi Wang, Jing Jin, Zeyuan Gao, Li Hou,\* Xiwen Tao, Jing Wang,\* Yueqi Zhao and Faming Gao\*

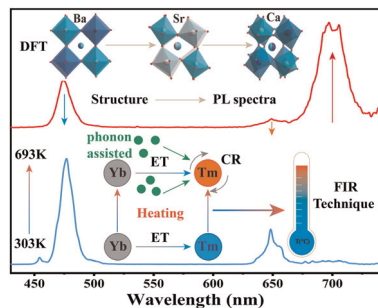
2775



### Efficient doped and non-doped light-emitting diodes based on a TADF-emitting Cu<sub>4</sub>Br<sub>4</sub> cluster

Xin Lu, Shao-Jie Wu, Ya-Shu Wang, Shan-Yue Wei, Lingyi Meng, Xi-He Huang,\* Xu-Lin Chen\* and Can-Zhong Lu\*

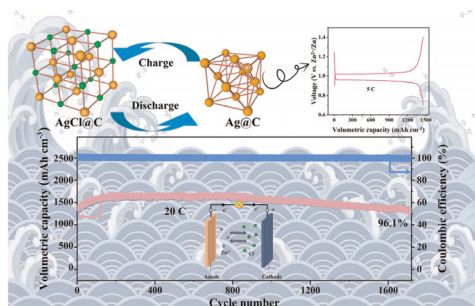
2784



### Achieving high-sensitivity dual-mode optical thermometry *via* phonon-assisted cross-relaxation in a double-perovskite structured up-conversion phosphor

Houhe Dong, Zonghao Lei, Shikun Su, Wenhua Yang,\* Xuyang Zhang, Wenyong Teng, Guangyue Zu, Bing Teng\* and Degao Zhong\*

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### Nanocarbon armor reinforced Ag particles to build a high-rate and long-lifespan aqueous Zn<sup>2+</sup>/Cl<sup>-</sup> dual-ion battery

Wenbo Guo, Tianyuan Zhang, Guangchang Shu, Leiyu Fan, Zhouxiang Wu, Lei Yan, Liyuan Zhang, Haoxiang Yu,\* Ting-Feng Yi and Jie Shu\*

