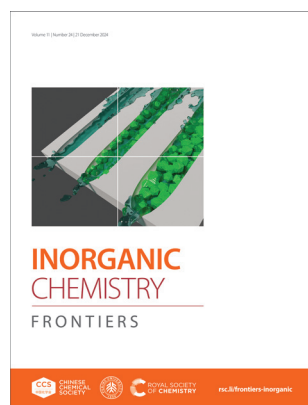


### IN THIS ISSUE

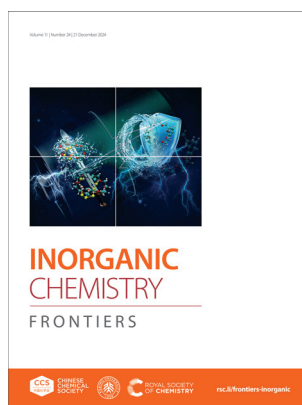
ISSN 2052-1553 CODEN ICFNAW 11(24) 8577-8956 (2024)



#### Cover

See Waldemar A. Mamisollé, Matias Rafti *et al.*, pp. 8627–8639.

Image reproduced by permission of Matias Rafti from *Inorg. Chem. Front.*, 2024, **11**, 8627.



#### Inside cover

See Hua Ji, He Zhu, Si Lan *et al.*, pp. 8640–8648.

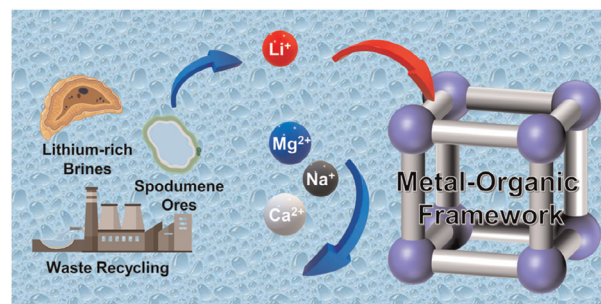
Image reproduced by permission of He Zhu from *Inorg. Chem. Front.*, 2024, **11**, 8640.

### REVIEWS

8589

#### Lithium extraction by metal–organic frameworks

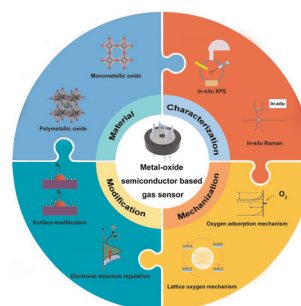
Zongsu Han, Joshua Rushlow, Yihao Yang, Jiatong Huo, Wei Shi\* and Hong-Cai Zhou\*



8602

#### Surface oxygen chemistry of metal oxide semiconductors for gas-sensing applications

Jiayu Li, Ertai Na, Xudong Liang, Qihua Liang, Meihong Fan, Hui Chen,\* Guo-Dong Li\* and Xiaoxin Zou\*



# RSC Applied Polymers

GOLD  
OPEN  
ACCESS

The application of polymers,  
both natural and synthetic

Interdisciplinary and open access

[rsc.li/RSCApplPolym](https://rsc.li/RSCApplPolym)

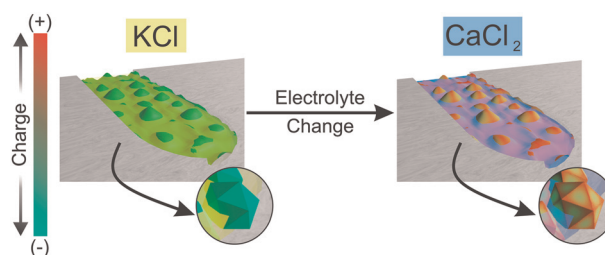
Fundamental questions  
Elemental answers

## RESEARCH ARTICLES

8627

### Calcium chloride as an ionic response modulator in metal–organic framework-modified nanochannels (MOF@SSNs): enhancing ionic current saturation and selectivity

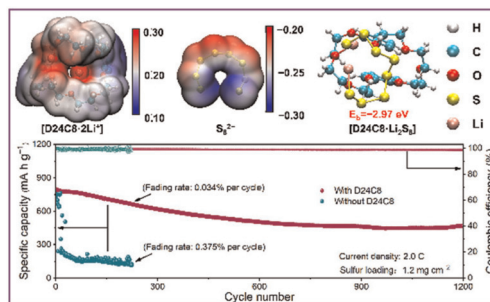
Angel L. Huamani, Gregorio Laucirica, Juan A. Allegretto, María Eugenia Toimil-Molares, Agustín S. Picco, Marcelo R. Ceolín, Aline R. Passos, Omar Azzaroni, Waldemar A. Mamióllé\* and Matías Rafti\*



8640

### Benzo-crown ether electrolyte additives in facilitating sulfur evolution and lithium anode stabilization for high-performance lithium–sulfur batteries

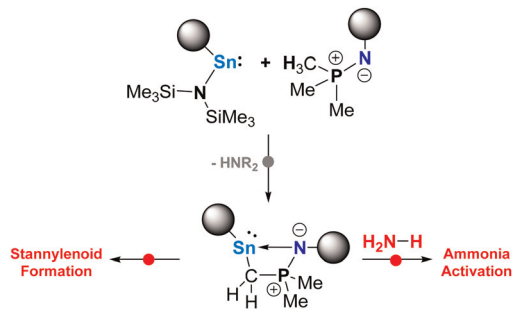
Zhihua Wang, Zhenjun Xue, Junru Ke, Min Dong, Bei Ma, Zhe Zhang, Hua Ji,\* Qingmin Ji, He Zhu\* and Si Lan\*



8649

### Ammonia activation using a heteroleptic stannylene and lithium stannylenoid formation facilitated by hemilabile iminophosphorane-based ligands

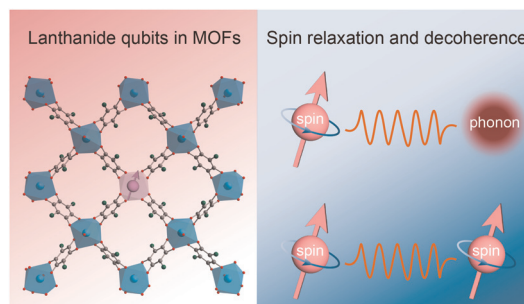
David M. J. Kregel, Nico Graw, Regine Herbst-Irmer, Dietmar Stalke, Oliver P. E. Townrow\* and Malte Fischer\*



8660

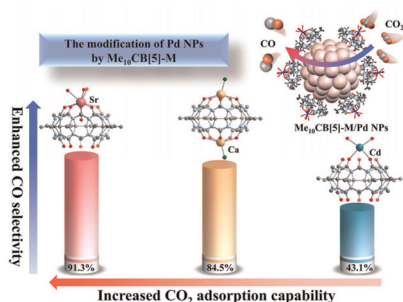
### Optimizing the spin qubit performance of lanthanide-based metal–organic frameworks

Xiya Du and Lei Sun\*



## RESEARCH ARTICLES

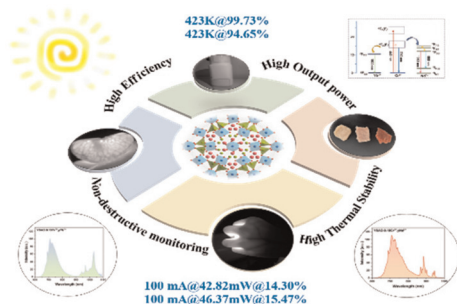
8671



### Enhancing CO<sub>2</sub> electroreduction with decamethylcucurbit[5]uril-alkaline earth metal modified Pd nanoparticles

Tao Shao, Xianmeng Song, Zongnan Wei, Shuaibing Yang, Siying Zhang, Rong Cao and Minna Cao\*

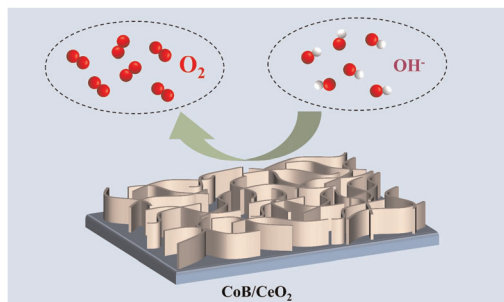
8679



### Tunable luminescence *via* Cr<sup>3+</sup>–Yb<sup>3+</sup>/Nd<sup>3+</sup> energy transfer in Cr<sup>3+</sup> and Yb<sup>3+</sup>/Nd<sup>3+</sup> coactivated NIR phosphors for non-destructive analysis

Xiaowei Zhang, Dashuai Sun, Pengcheng Luo, Luhui Zhou, Zheng Lu, Jia Liu, Congcong Fan, Xinyu Ye\* and Hongpeng You\*

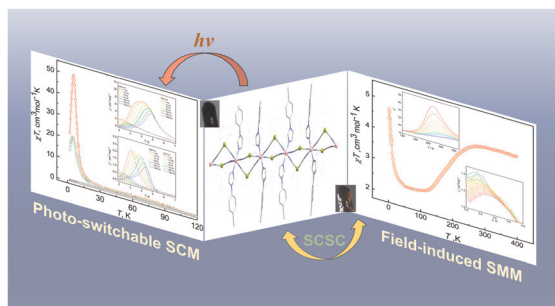
8690



### A moss-like CoB/CeO<sub>2</sub> heterojunction as an efficient electrocatalyst for the oxygen evolution reaction under alkaline conditions

Weijie Fang, Chaofan Liu, Jiang Wu,\* Weikai Fan, Le Chen, Zaiguo Fu, Lin Peng, Ping He, Jia Lin\* and Zhongwei Chen\*

8704



### Reversible on–off switching of a single-chain magnet *via* single-crystal-to-single-crystal transition and light-induced metal-to-metal electron transfer

Meng-Jia Shang, Han-Han Lu, Qiang Liu, Ren-He Zhou, Hui-Ying Sun, Zhen Shao, Liang Zhao, Yin-Shan Meng\* and Tao Liu\*

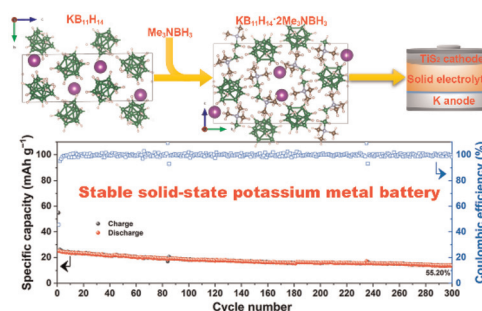


## RESEARCH ARTICLES

8715

### Stable solid-state potassium metal batteries enabled by a $\text{KB}_{11}\text{H}_{14}\cdot 2\text{Me}_3\text{NBH}_3$ complex electrolyte

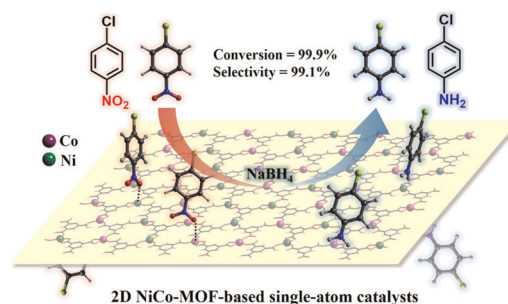
Guo-Guo Zhang, Pengtao Qiu,\* Jia-Xin Kang, Zhiwei Lu, An-Qi Zhu, Xiaohu Yu and Xuenian Chen\*



8725

### Ultrathin 2D NiCo-MOF bimetallic nanosheets as single-atom catalysts for chemoselective hydrogenation of nitroarenes

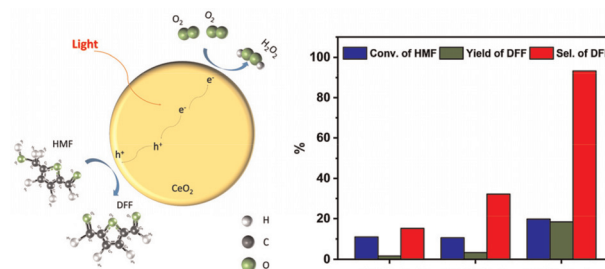
Yu-Xuan Zhang, Yi-Jie Ma, Yu-Jia Zhao, Zi-Yan Wang, Cai-Xia Yu,\* Xiao-Qiang Li\* and Lei-Lei Liu\*



8737

### Facet-engineered $\text{CeO}_2$ with Cu single atoms drives photocatalytic selective oxidation of 5-hydroxymethylfurfural

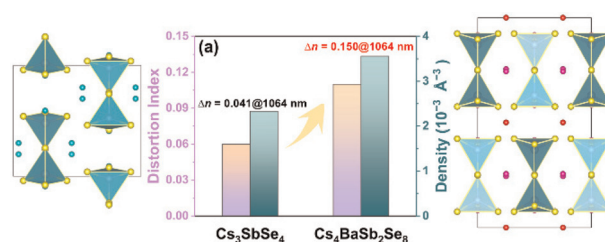
Yifei Li, Senyao Meng, Ping Wang, Miao He, Jiasai Yao, Cheng Yang, Fangzhou Mo, Jiang Li\* and Zhenxing Li\*



8753

### Simple aliovalent cation substitution to induce strong optical anisotropy enhancement in a rare thioantimonate(v) family

Qixian Ren, Wangfei Che, Mengmeng Chen, Chen Cui,\* Yabo Wu\* and Zhi Su\*



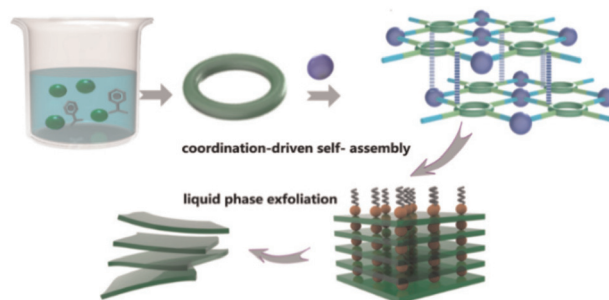
8762



### Enhancement of the dynamic luminescence and self-recovery performance of Zn<sup>2+</sup> co-doped Sr<sub>3</sub>Ga<sub>4</sub>O<sub>9</sub>:Sm<sup>3+</sup>

Jingjing Li, Zhangwen Long, Xiaqing Jiang, Junyi Yang, Dacheng Zhou, Yong Yang, Qi Wang, Hao Wu\* and Jianbei Qiu\*

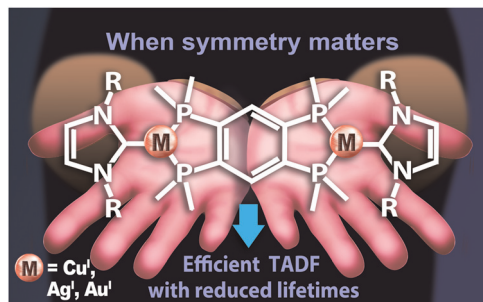
8770



### Unprecedented aluminum molecular ring based-layer with tailorable optical limiting effect

Lin Geng, Di Wang, Ran-Qi Chen, San-Tai Wang, Chan Zheng,\* Wei-Hui Fang\* and Jian Zhang

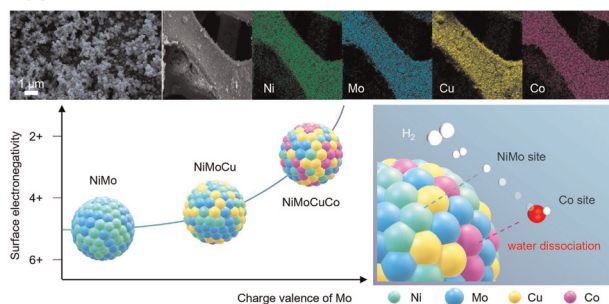
8778



### Toward highly efficient TADF-active Cu(I), Ag(I) and Au(I) carbene complexes using symmetry-based design strategy

Alexander V. Artem'ev,\* Maxim I. Rogovoy, Ilia M. Odud, Maria P. Davydova, Marianna I. Rakhmanova, Pavel A. Petrov, Valery K. Brel, Oleg I. Artushin, Konstantin A. Brylev, Denis G. Samsonenko, Alexey S. Berezin, Dmitry E. Gorbunov and Nina P. Gritsan\*

8789



### A highly active and durable NiMoCuCo catalyst with moderated hydroxide adsorption energy for efficient hydrogen evolution reaction

Hyeonggeun Choi, Seunghwan Jo, Ki Hoon Shin, HeeYoung Lim, Liting Zhang, Keon Beom Lee, Young-Woo Lee\* and Jung Inn Sohn\*



## RESEARCH ARTICLES

8797

### Exploring the optimal post-treatment strategy for boosting the electrochemical performances of a new bimetal–organic framework-based supercapacitor

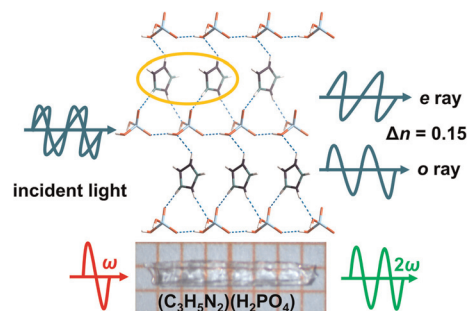
Xinwen Dou, Mingyue Liu, Tian Cao, Chan Wang, Yingjie Zhang, Yuhang Jia, Qiang Ju and Zhenlan Fang\*



8813

### Large optical anisotropy in noncentrosymmetric phosphate with pseudo 2D intercalated layer

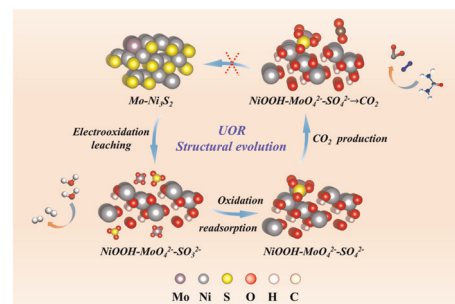
Qiao Xia, Xingxing Jiang, Lu Qi, Chao Wu,\* Zheshuai Lin, Zhipeng Huang, Mark G. Humphrey, Kazuyuki Tatsumi and Chi Zhang\*



8824

### Dissecting the role of anions in surface reconstruction in urea oxidation to maximize assisted hydrogen production

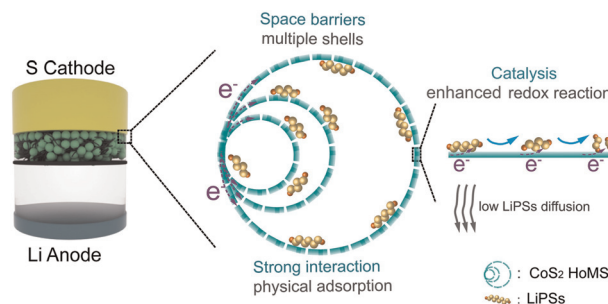
Weiwei Bao, Mameng Yang, Taotao Ai,\* Jie Han,\* Zhifeng Deng, Xiangyu Zou, Peng Jiang and Junjun Zhang



8837

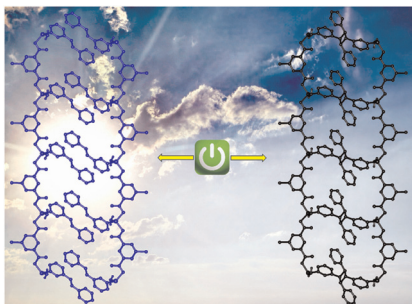
### Multifunctional separator modified with catalytic multishelled structural CoS₂ enables a stable lithium–sulfur battery

Ruyi Bi, Jilu Zhao, Mei Yang, Jiangyan Wang,\* Ranbo Yu\* and Dan Wang\*



## RESEARCH ARTICLES

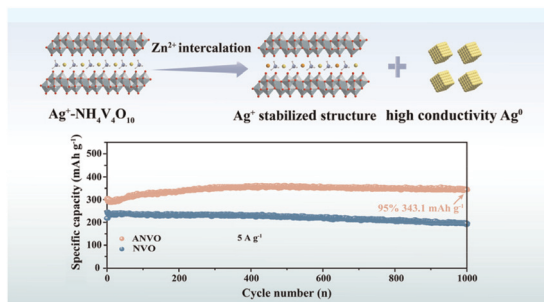
8847



### Reversible single-crystal to single-crystal photoreaction between a coordination comb and a ladder displays photo-switchable fluorescence

Ni-Ya Li, Xin-Yu Wang, Pei-Xuan Zhang, Ning-Ning Zou, Wen Qiu, Yu-Fei Xing, Yun-Jian Wang,\* Xiao-Yan Tang\* and Dong Liu\*

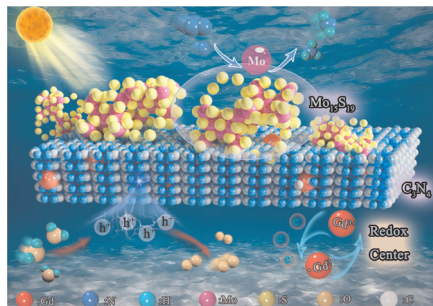
8855



### Dual effects of Ag<sup>+</sup> intercalation boosting the kinetics and stability of NH<sub>4</sub>V<sub>4</sub>O<sub>10</sub> cathodes for enhanced zinc ion storage

Zhou Fang, Yi Tong, Yue Yang, Anjun Hu, Jianping Long, Yan Zhao, Xin Lai, Daojiang Gao\* and Mengjiao Liu\*

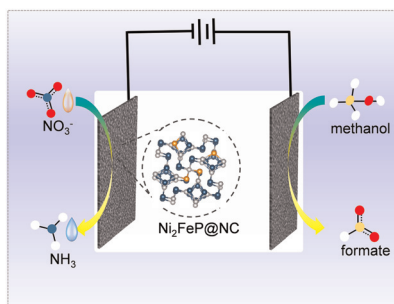
8866



### Multistage construction of Gd-doped g-C<sub>3</sub>N<sub>4</sub>/Mo<sub>15</sub>S<sub>19</sub> composites enabled both N<sub>2</sub> activation and multiple electron transfer for an enhanced photocatalytic nitrogen reduction reaction

Xiaoyu Jiang, Boran Tao and Hongda Li\*

8876



### Ammonia and formate cosynthesis *via* nitrate electroreduction combined with methanol electrooxidation over nitrogen-doped carbon-encapsulated nickel iron phosphide

Zongyi Wang, Jiuli Chang\* and Zhiyong Gao\*

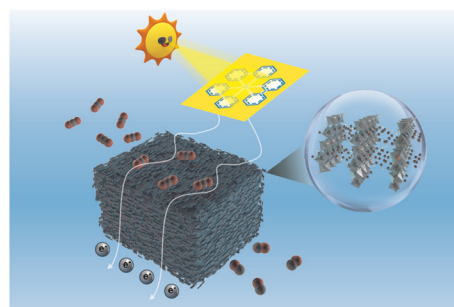


## RESEARCH ARTICLES

8890

### A non-equivalent Ni doped La-MOF for enhanced photocatalytic CO<sub>2</sub> reduction through oxygen vacancy regulation and electronic structure optimization

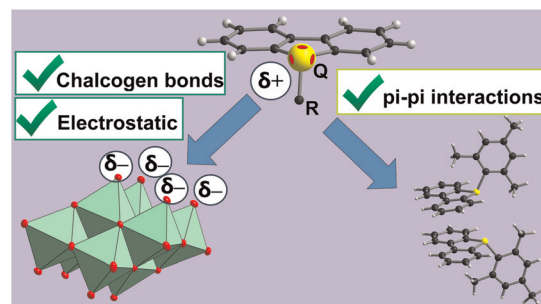
Tongzheng Zhang, Zhaohui Huang, Guanshun Xie, Le Liao, Changqiang Yu, Xiuqiang Xie\* and Nan Zhang\*



8902

### Chalcogen bonds provide supramolecular association of beta-octamolybdate and chalconium cations

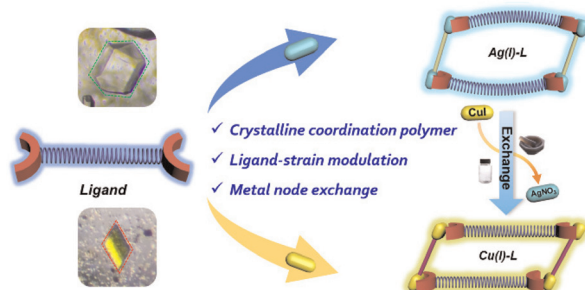
Anna A. Kuznetsova, Vadim V. Yanshole, Mikhail V. Il'in, Alexander S. Novikov, Dmitrii S. Bolotin, Maxim N. Sokolov and Pavel A. Abramov\*



8916

### Metal node exchange-driven ligand-strain modulation strategy for one-dimensional crystalline coordination polymers

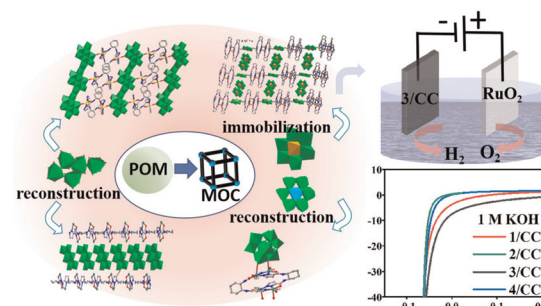
Gengxin Wu, Yong-Kang Zhu, Dongxia Li, Jia-Rui Wu, Yan Wang,\* Zhiquan Zhang\* and Ying-Wei Yang\*



8925

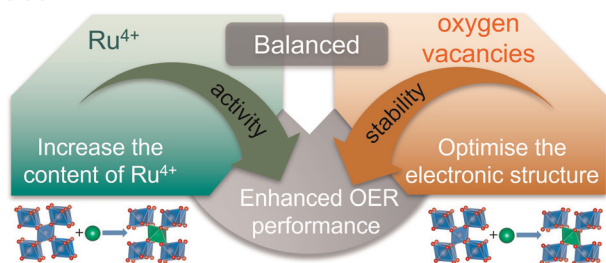
### Reconstruction and immobilization of polymolybdate induced by metal-organic coordination units for enhanced electrocatalytic hydrogen generation

Jingyi Ma, Zhihan Chang,\* Xue Xi, Juju Liang, Yuchun Lin, Yaling Zhu and Xiuli Wang\*



## RESEARCH ARTICLES

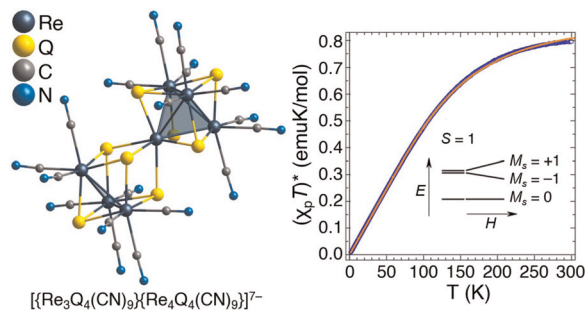
8935



### Strontium-doped RuO<sub>2</sub> electrocatalyst with abundant oxygen vacancies for boosting OER performance

Bei An, Xiaoqian Li, Yuan Lin, Fanfan Shang, Huijie He, Hairui Cai, Xiaoxiao Zeng, Weitong Wang, Shengchun Yang\* and Bin Wang\*

8945



### Multispin superatoms: seven-nuclear rhenium clusters with unusual magnetic properties

Aleksei S. Pronin, Yakov M. Gaifulin, Taisiya S. Sukhikh, Alexander N. Lavrov and Yuri V. Mironov\*

## CORRECTION

8953

### Correction: Coordination tuning of Ni/Fe complex-based electrocatalysts for enhanced oxygen evolution

Hongbo Zhou, Xuan Hao, Jiexin Guan, Yilin Deng, Zi Wei, Yashu Liu and Guoxing Zhu\*

