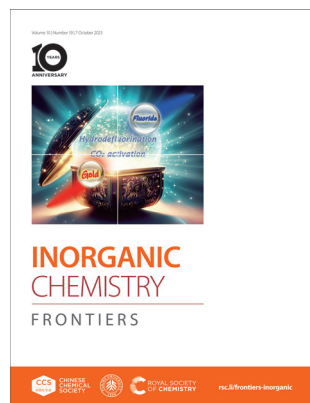


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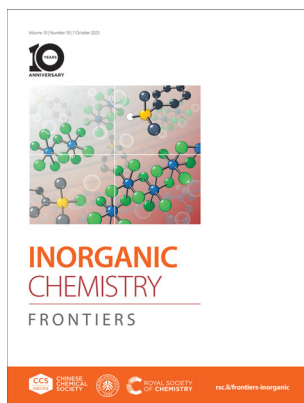
ISSN 2052-1553 CODEN ICFNAW 10(19) 5499–5790 (2023)



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See Jun-Long Zhang *et al.*, pp. 5573–5583.

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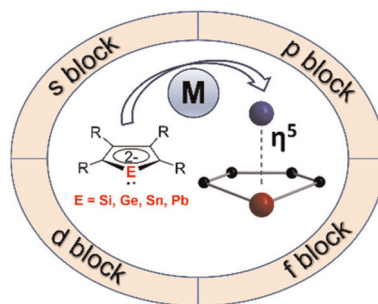
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#### Group 14 metallole dianions as $\eta^5$ -coordinating ligands

Xiaofei Sun and Peter W. Roesky\*

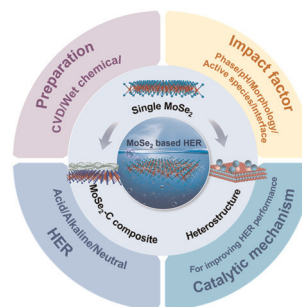


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#### Recent advances in molybdenum diselenide-based electrocatalysts: preparation and application in the hydrogen evolution reaction

Chunming Yang,\* Xiang Li and Yucang Liang\*



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## Porous framework materials for stable Zn anodes in aqueous zinc-ion batteries

## RESEARCH ARTICLES

## Fluoride counterions boost gold(I) catalysis: case studies for hydrodefluorination and CO<sub>2</sub> hydrosilylation

### Facile access to mid-valent Group 5 and 6 metal synthons

*Facile Route to Mid-Valent Group 5 and 6 Synthons*



$MCl_{x-n} + n \text{ PhMe}_2\text{SiH} \xrightarrow[\text{- } n/2 \text{ H}_2]{\text{Toluene}} MCl_{x-n} + n \text{ PhMe}_2\text{SiO}$

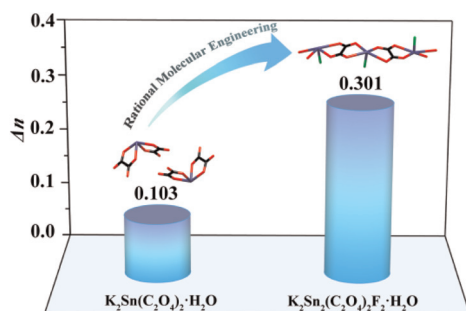
$M = \text{Nb, Ta, Mo, W}$   
 $n = 1 \text{ or } 2$

# Portable self-powered photoelectrochemical immunosensor based on $\text{Cu}_3\text{SnS}_4$ nanoflower for ultra-sensitive and real-time detection of human cytochrome c

The diagram illustrates the structure and operation of the photoelectrochemical sensor. The sensor consists of an ITO substrate coated with a  $\text{Cu}_3\text{SnS}_4$  layer, followed by a CS (chitosan) layer, and then a series of layers: anti-Cyt *c*, BSA (bovine serum albumin), and Cyt *c*. The  $\text{Cu}_3\text{SnS}_4$  layer is shown with its band structure, with a band gap of 1.67 eV. Under visible light, an electron ( $e^-$ ) is excited from the valence band (VB) to the conduction band (CB). The CS layer is shown as a porous structure. The anti-Cyt *c*, BSA, and Cyt *c* layers are shown as a series of layers. The Cyt *c* layer is shown with its characteristic heme structure. A graph on the right shows the photocurrent response over time, with a sharp increase in current when Cyt *c* is added to the solution.

## RESEARCH ARTICLES

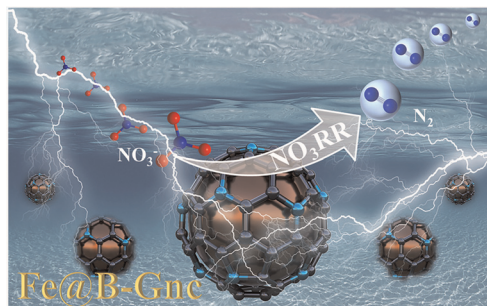
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**The transformation of a zero-dimensional cluster into a one-dimensional chain structure achieving a dramatically enhanced birefringence in tin(II)-based oxalates**

Liying Ren, Linhong Cheng, Xiaoyan Zhou, Jinxuan Ren, Liling Cao,\* Ling Huang, Xuehua Dong, Yuqiao Zhou, Daojiang Gao and Guohong Zou\*

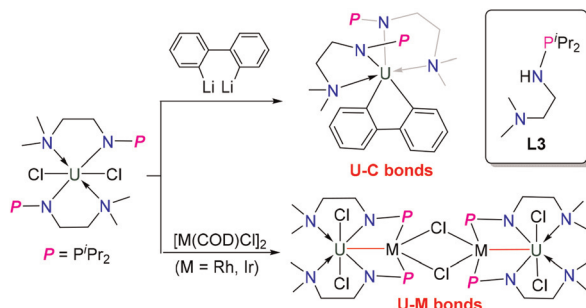
5611



**Confinement engineering for enhanced electrocatalytic nitrate reduction by integrating B-doped graphene with iron catalysts for long-term stability**

Hongxia Luo, Chuqi Wang, Yuting Cong, Yuanyuan Ma,\* Jianping Yang and Jun Chen\*

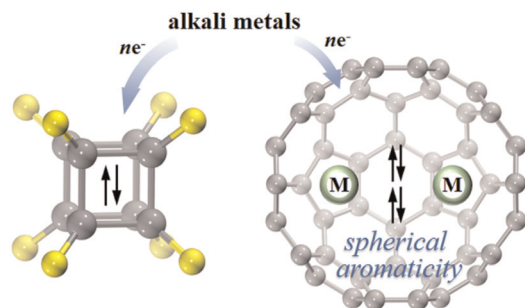
5622



**Synthesis and reactivity of a uranium(IV) complex supported by a monoanionic nitrogen–phosphorus ligand**

Kai Li, Jialu He, Yue Zhao and Congqing Zhu\*

5634



**Alkali-metal coating: an effective method to inject electrons into cage molecules and achieve direct metal–metal bonds and spherical aromaticity for endohedral metallofullerenes**

Xiaojiao Gu and Peng Jin\*



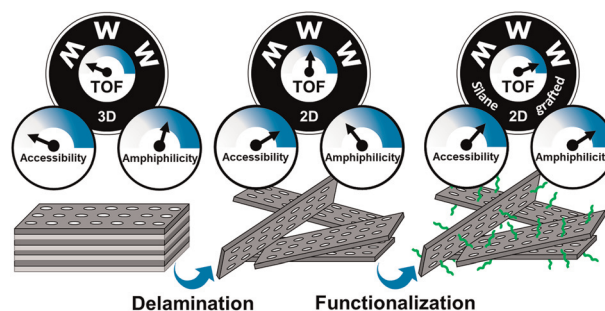


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## Tailoring the accessibility and amphiphilicity of MWW zeolites for two-phase glycerol ketalization

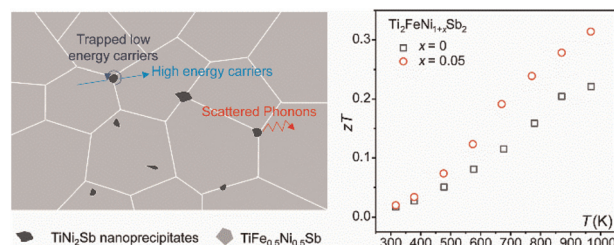
Diego S. D. Lima, Laura L. Silva, Iago W. Zapelini, Svetlana Mintova and Leandro Martins\*



5662

Enhancing the thermoelectric performance of a  $\text{Ti}_2\text{FeNiSb}_2$  double half-Heusler alloy through excess Ni-induced full-Heusler nanoprecipitates

Rahidul Hasan, Yan Gu, Se Yun Kim, Dong Won Chun\* and Kyu Hyung Lee\*



5668

Tailoring the d-band center of porous  $\text{CoS}_2$  nanospheres via low-electronegative Fe for weakened  $\text{OH}^*$  adsorption and boosted oxygen evolution

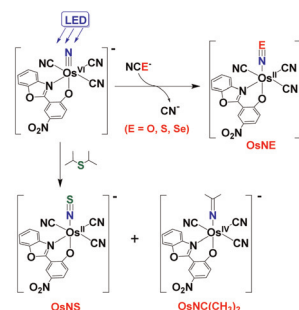
Heyuan Chen, Wei Wu, Suhao Chen, Zichen Wang, Runzhe Chen and Niancai Cheng\*



5678

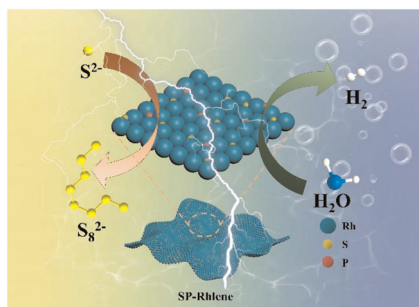
Chalcogen atom abstraction from  $\text{NCE}^-$  ( $\text{E} = \text{O}, \text{S}, \text{Se}$ ) and  $\text{i-Pr}_2\text{S}$  by the excited state of a luminescent tricyano osmium(vi) nitride

Li-Xin Wang, Miaomiao Zhou, Lu-Lu Liu, Jing Xiang\*, Ji-Yan Liu, Kai-Chung Lau\* and Tai-Chu Lau\*



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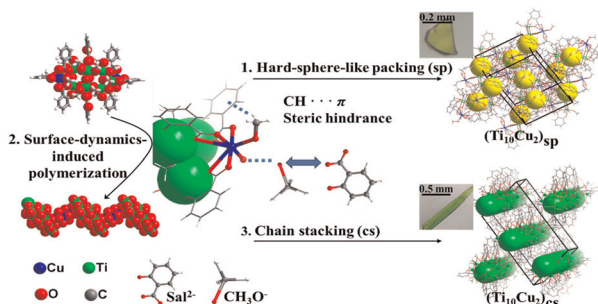
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### Electronic and active site engineering in Rh metallene via phosphorus and sulfur dual-doping for electrocatalytic sulfion recycling and hydrogen generation

Hongjing Wang, Yuqin Liang, Songliang Liu, Xu Mu, Hongjie Yu, Kai Deng, Ziqiang Wang, You Xu\* and Liang Wang\*

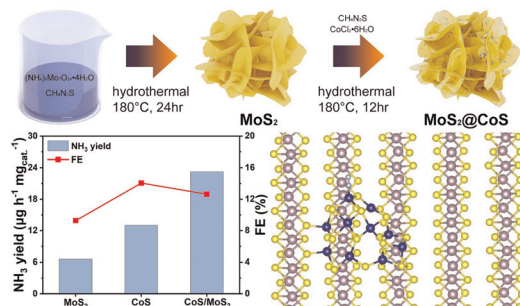
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### A surface-dynamic approach toward supercrystal engineering of titanium-oxo clusters

Ling-Cui Meng, Zhi-Ming Feng, Zhan-Guo Jiang\* and Cai-Hong Zhan\*

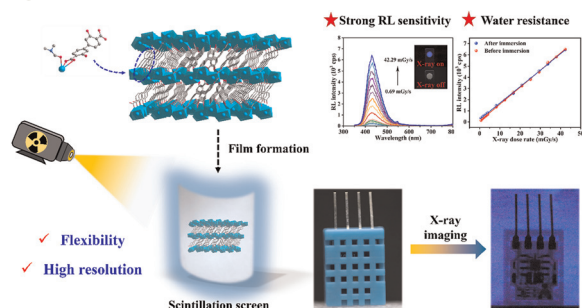
5700



### Interface engineering of CoS/MoS<sub>2</sub> heterostructure for the electrocatalytic reduction of N<sub>2</sub> to NH<sub>3</sub>

Yixian Liu, Ruqiang Wu, Yunliang Liu, Peiji Deng, Yaxi Li, Yuanyuan Cheng, Yongchao Du, Zenan Li, Xiong Yan, Naiyun Liu,\* Zhenhui Kang\* and Haitao Li\*

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### Flexible strontium-based metal-organic framework scintillation screens for high-resolution X-ray imaging

Peng-Kun Wang, Wen-Fei Wang, Bao-Yi Li, Mei-Juan Xie, Hong-Yi Bian, Shuai-Hua Wang, Fa-Kun Zheng\* and Guo-Cong Guo\*

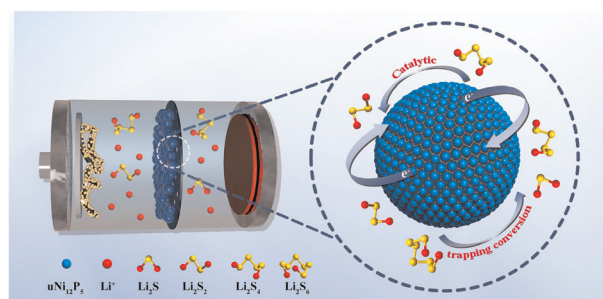


## RESEARCH ARTICLES

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### Ultrafine $\text{Ni}_{12}\text{P}_5$ nanoparticle-embedded carbon with abundant catalytic activity sites as separator modifiers in high-performance lithium–sulfur batteries

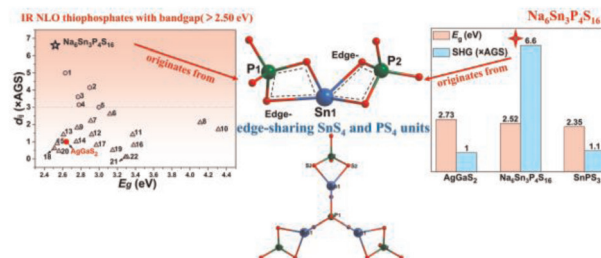
Yiqian Li, Yuehan Hao, Usman Ali, Bingqiu Liu, Qi Zhang, Zhanshuang Jin,\* Lu Li, Chungang Wang and Lingyu Zhang\*



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### $\text{Na}_6\text{Sn}_3\text{P}_4\text{S}_{16}$ : Sn(II)-chelated $\text{PS}_4$ groups inspired an ultra-strong SHG response

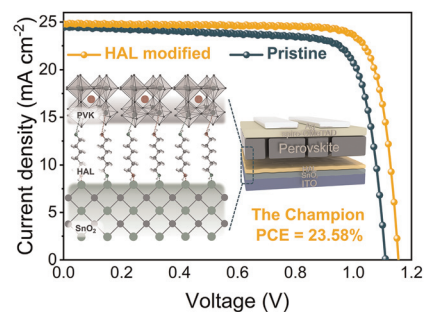
Chenyao Zhao, Bingbing Zhang,\* Xinyu Tian, Guoqiang Zhou,\* Jingjing Xu and Kui Wu\*



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### Enhanced performance of perovskite solar cells via a bilateral electron-donating passivator as a molecule bridge

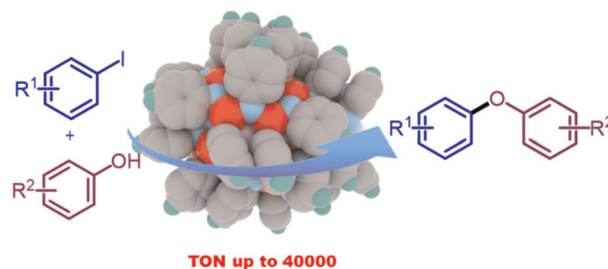
Weichun Pan, Pengxu Chen, Sijia Zhu, Ruowei He, Qingshui Zheng, Fengxian Cao, Zhang Lan, Jihuai Wu,\* Weihai Sun\* and Yunlong Li\*



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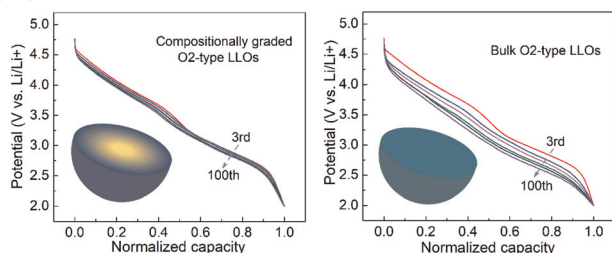
### Ligand-passivated Au/Cu nanoclusters with uncoordinated sites give reaction turnover numbers of up to $4 \times 10^4$

Lu Dong, Linke Yu, Xueli Sun, Xiongkai Tang, Xuexin You, Jiaqi Tang, Zi-Ang Nan, Dongxu Cao, Yanyuan Jia, Simin Li, Fengyu Li,\* Shuo Guo\* and Hui Shen\*



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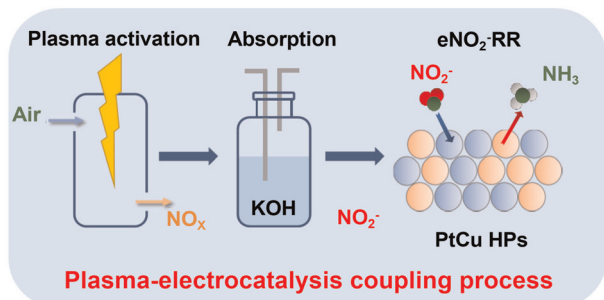
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### Boosting the voltage/capacity stability of O<sub>2</sub>-type Li-rich layered cathodes by tailoring transition metal distribution for Li-ion batteries

Peiyu Hou, Zhenbo Sun, Mohan Dong, Maosheng Gong, Feng Li\* and Xijin Xu\*

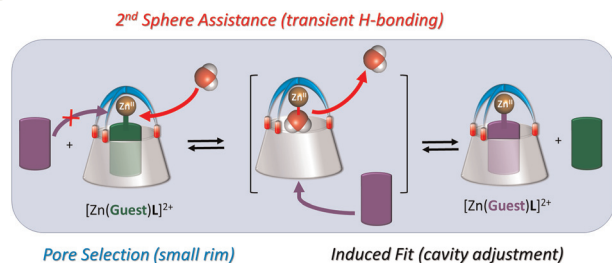
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### Sustainable ammonia synthesis from air by the integration of plasma and electrocatalysis techniques

Jun Ding, Wenyi Li,\* Qingqing Chen, Jiafang Liu, Shu Tang, Zhiwei Wang, Longwei Chen\* and Haimin Zhang\*

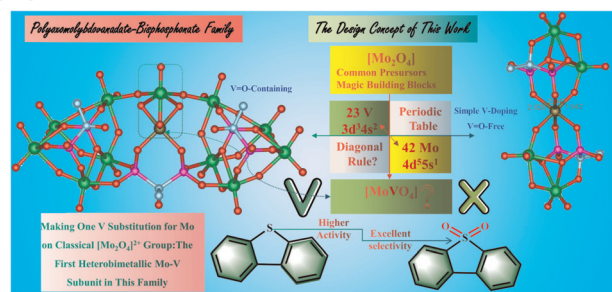
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### Guest exchange in a biomimetic Zn<sup>II</sup> cavity-complex: kinetic control by a catalytic water, through pore selection, 2nd sphere assistance, and induced-fit processes

N. Nyssen, N. Giraud, J. Wouters, I. Jabin, L. Leherter\* and O. Reinaud\*

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### Making one V<sup>IV</sup> substitution for Mo on classical [Mo<sub>2</sub>O<sub>4</sub>]<sup>2+</sup> group: the first heterobimetallic Mo–V subunit in polyoxomolybdate–bisphosphonate family

Xiangyu Ren, Baokuan Chen,\* Gang Zhang, Yanfeng Bi,\* Lingling Dai and Guoping Yang\*

