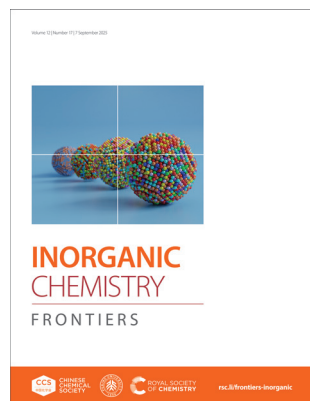


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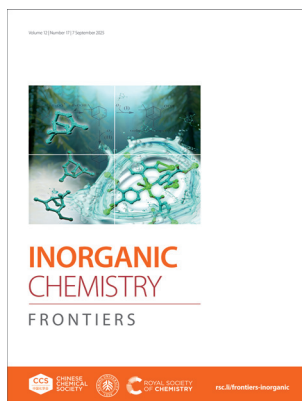
ISSN 2052-1553 CODEN ICFNAW 12(17) 4921–5208 (2025)



Cover

See Julien Mahin, Kohei Kusada, Hiroshi Kitagawa, pp. 4930–4967.

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Inside cover

See Chris H. J. Franco, Marina V. Kirillova, Alexander M. Kirillov et al., pp. 5003–5015.

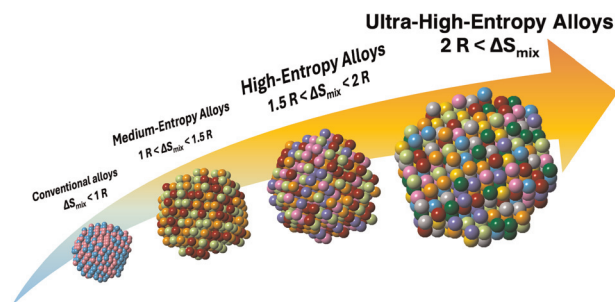
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REVIEWS

4930

Ultra-high-entropy alloy nanoparticles: beyond five components

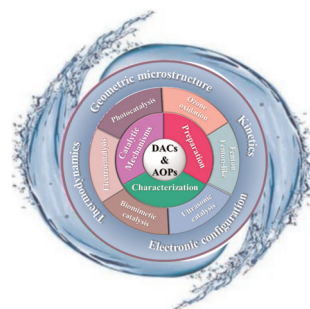
Julien Mahin,* Kohei Kusada* and Hiroshi Kitagawa*



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Geometric and electronic perspectives on dual-atom catalysts for advanced oxidation processes

Bofan Zhang, Jialiang Rui, Ye Zhang, Luyu Yang, Shiro Kubuki, Yang-Chun Yong* and Liang Zhang*



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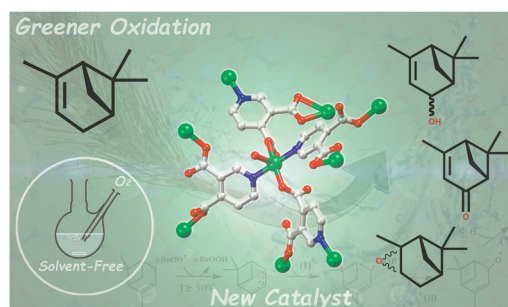
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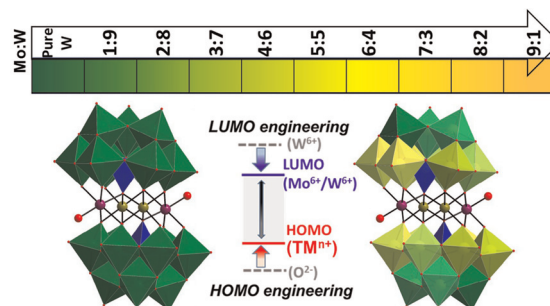
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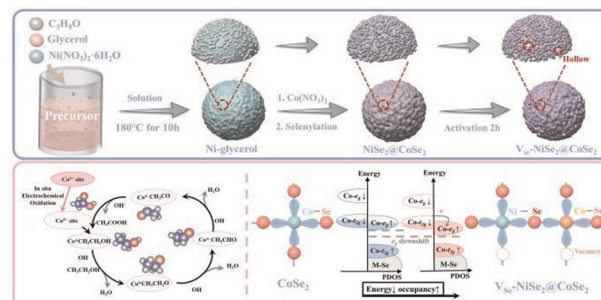
5003

Copper pyridinedicarboxylates: assembly, structures, and catalytic oxidation of terpenesGilvan A. Correia, Chris H. J. Franco,*
Marina V. Kirillova* and Alexander M. Kirillov*

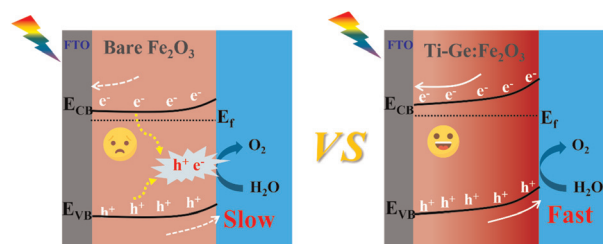
5016

Mixed addenda polyoxometalates by cooperative self-assembly and modulation of their optoelectronic propertiesGanga Singh, Ruchika Choudhary and
Debaprasad Mandal*

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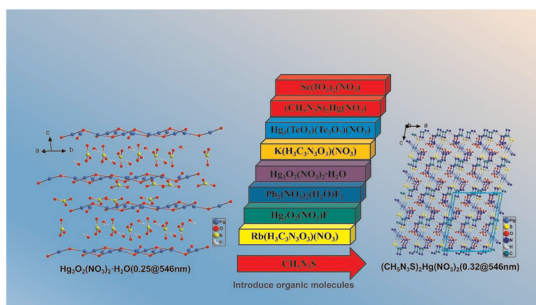
Modulation of Se vacancies on NiSe₂@CoSe₂ heterostructures to optimize ethanol electrooxidation activity for efficient hybrid water splitting and zinc–ethanol–air batteriesJiahui Li, Feilong Fang, Yongqi Jian, Zilong Li,
Junmin Zhu, Fangyan Xie, Jian Chen, Yanshuo Jin,
Nan Wang,* Xiyun Zhang* and Hui Meng*

5037

Enhancement of the photoelectrochemical water splitting performance of hematite photoanodes via uniform Ti and gradient Ge co-dopingChunlian Hu, Junhao Wu, Congzhao Dong, Xiao Fang,
Pengfei Feng, Bonan Li, Baochun Ma and Yong Ding*

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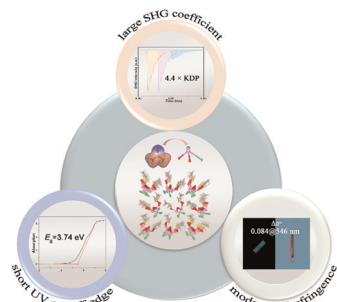
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A π -conjugated organic molecule-modified strategy to achieve high-performance metal nitrate birefringent crystals

Yi-Lei Lv, Liang Ma, Guo-Ren Zhu, Bing-Wei Miao, Wenlong Liu, Sheng-Ping Guo* and Ru-Ling Tang*

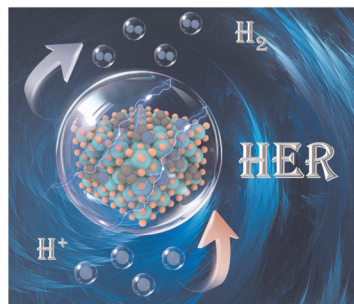
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Harnessing the dual role of DMSO in the synthesis of SbOCl·DMSO: an excellent nonlinear optical crystal with unique 1D spiral chain

Xiande Peng, Xiangyuan Li, Yingzi Zhang, Xuehua Dong,* Ling Huang, Liling Cao, Daojiang Gao and Guohong Zou*

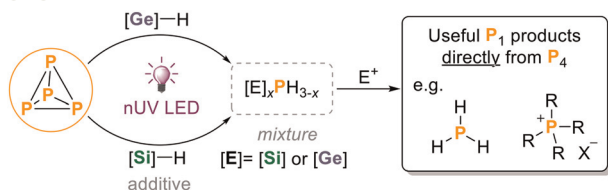
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Microwave quasi-solid-state-constructed low-content Pt on CeO₂ with strong electronic interactions for efficient electrocatalytic acidic overall water splitting

Jing Li, Qihao Wang, Ruotong Guo, Yingxia Zong, Jun Xing, Weiping Xiao, Guangrui Xu, Dehong Chen,* Lei Wang* and Zexing Wu*

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Hydrosilylation and hydrogermylation of white phosphorus

Jose Cammarata, Maximilian Schimpf, Daniel J. Scott* and Robert Wolf*

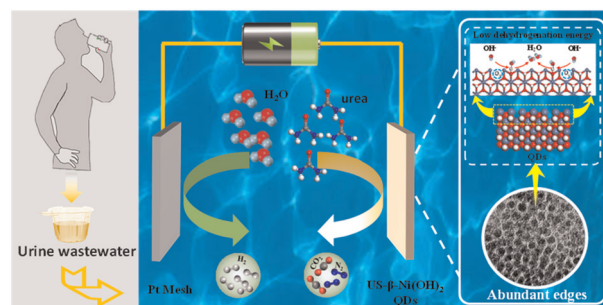


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Ultra-small β -Ni(OH)₂ quantum dot catalyst with abundant edges for an efficient urea oxidation reaction

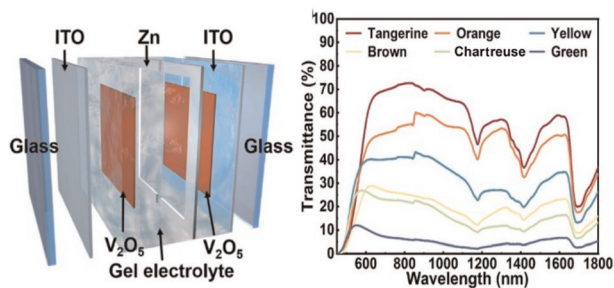
Qishuang Zhu, Xianshu Qiao,* Chuanjin Tian, Pengzhang Li, Yumin Liu, Wenyan Zhao, Liang Ma and Chang-An Wang*



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Rapid response and wide-band regulation of an electrochromic device achieved by ultra-small V₂O₅ nanodots and a Zn²⁺/Li⁺ electrolyte

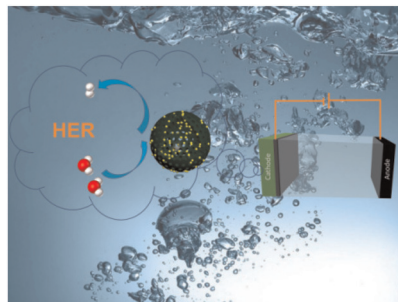
Ling Wang, Bin Wang, Haizeng Li* and Lixin Qiao*



5100

Enhancing electrocatalytic hydrogen evolution efficiency: tuning catalyst support pore size to optimize hydrogen adsorption–desorption kinetics

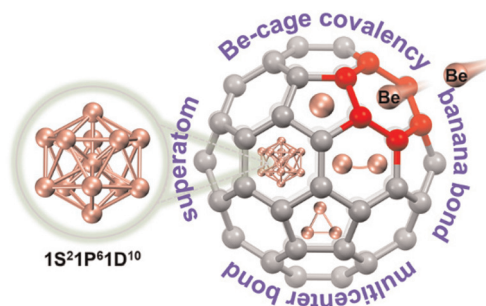
Yong Zhou, Bin Yang, Bing Li* and Xiaoyang Liu*



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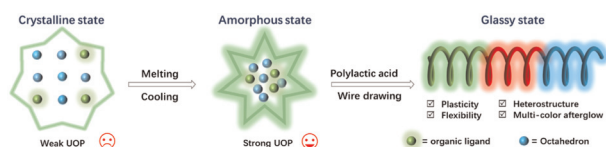
Be atoms in fullerenes: strong metal–cage covalency with the formation of Be–Be banana bonds, multicenter bonds and trapped superatoms

Shuaijiang Liu and Peng Jin*



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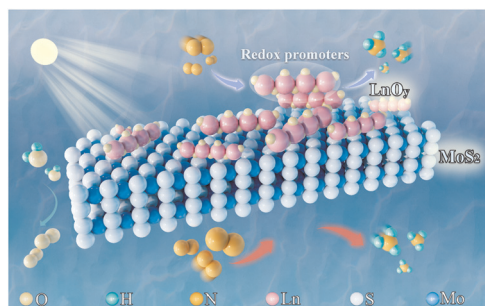
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Multi-color afterglow from amorphous hybrid perovskites for flexible, programmable heterostructured composites

Liwen Kang, Jinyu Xu, Junyan Wu,* Qidan Ling and Zhenghuan Lin*

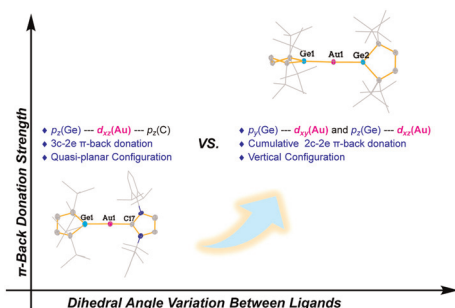
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Nitrogen-activation and charge-transfer lanthanide oxide promoters for enhanced photocatalytic ammonia synthesis

Hongda Li,* Bijun Zhou, Xiao Miao, Xu Zhu, Shiyu Chen, Xiaoyu Jiang and Pengyan Li*

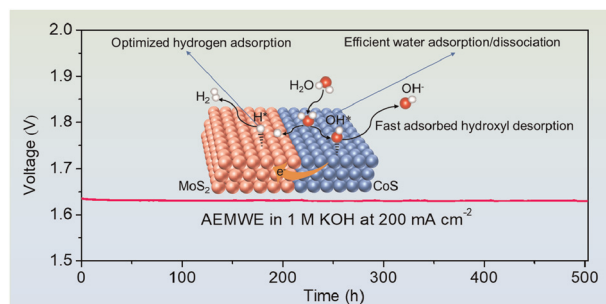
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Cumulative 2c–2e vs. 3c–2e π -back donations: conformation preferences in germylene gold(I) complexes

Lifang Wu, Rong Zhang, Xinran Wang, Wenyao Zeng, Lanhui Zhang, Yining Gao, Jiyong Liu, Lingbing Kong, Jiaxin Chen* and Liliang Wang*

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Unveiling the mechanism of enhanced alkaline hydrogen evolution kinetics on molybdenum–cobalt sulfides for efficient anion exchange membrane water electrolyzers

Jingbin Huang, Bin Hu, Yunlin Li, Jie Zhu,* Jing Jiang, Han Zhao, Jingxian Zhou, Lin Jin* and Renbing Wu*

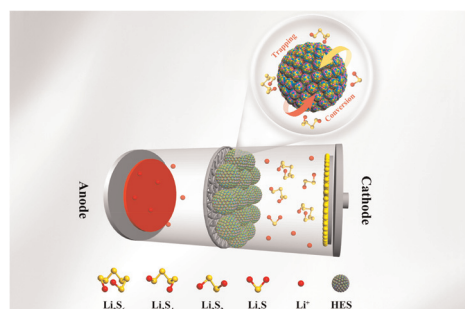


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High entropy sulfide nanoparticles as redox catalysts for lithium–sulfur batteries

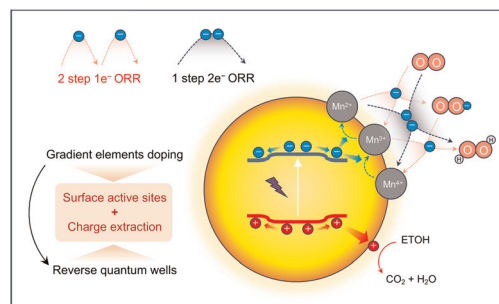
Yiqian Li, Yuehan Hao, Usman Ali, Mingxin Sui, Qi Zhang,* Lingyu Zhang, Lu Li, Bingqiu Liu* and Chungang Wang



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Reverse quantum wells in gradient-doped CdS for photocatalytic H₂O₂ production

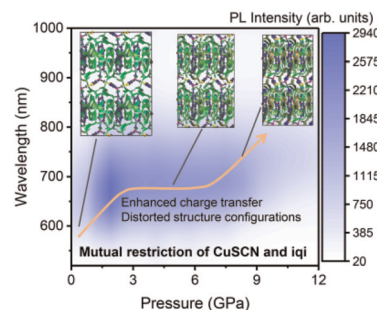
Xiaoying Bo, Caijie Yang, Bolun Li, Yikang Fan, Jiaoyan Li, Hengming Huang,* Jiahui Kou* and Chunhua Lu



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Mutual restriction-driven anomalous multistage piezochromic behavior in copper(I) thiocyanate/isoquinoline coordination polymers

Zhenxing Yang, Chunguang Zhai,* Jianqi Shang, Lingyan Dang, Yuchen Shang, Jiangya Xu, Yupu Zheng, Xiaolu Qi, Rui Shi and Mingguang Yao



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Synthesis of novel organic Ni(II) *N*-isonicotinoylhydrazine-carbothioamide complexes and their application in the oxygen evolution reactions

Xiaopei Li, Xianxu Chu,* Kefan Ying, Xi Cheng, Peng Sun, Haiyun Xu, Lu Li, Jie Zhang* and Wenjuan Li*

