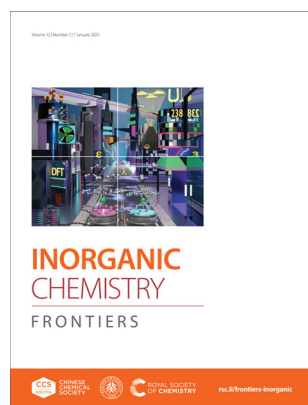


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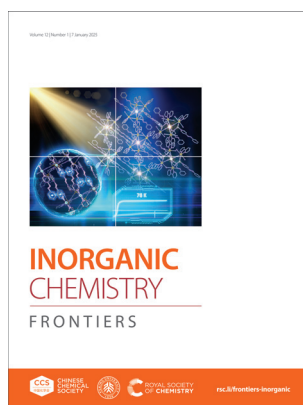
ISSN 2052-1553 CODEN ICFNAW 12(1) 1-382 (2025)



#### Cover

See Selvan Demir *et al.*, pp. 118–130.

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#### Inside cover

See Hiroki Oshio *et al.*, pp. 131–137.

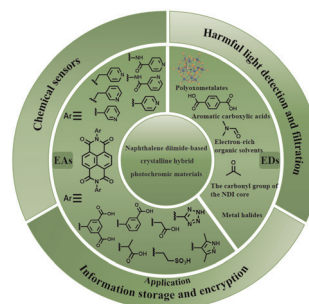
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### REVIEWS

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#### Naphthalene diimide-based crystalline hybrid photochromic materials: structural types, photochromic mechanism, and applications

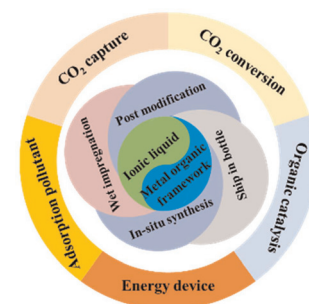
Li Li,\* Jian-Ge Zeng, Ning-Ning Zhang, Yang-Tao Yu, Shu-Hao Li and Yang Hua\*



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#### Ionic-liquid/metal–organic-framework composites: synthesis and emerging sustainable applications

Maiyong Zhu



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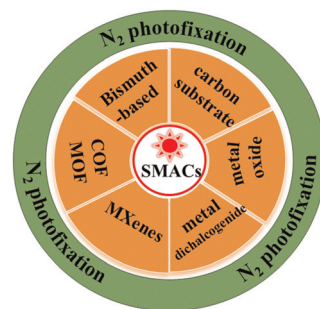


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### The use of single-metal atom-based photocatalysts for the production of ammonia through photocatalytic nitrogen fixation

Ping Zhang,\* Yongchong Yu, Reyila Tuerhong, Xinyu Du, Keyi Chai, Xiaoping Su,\* Qing Su,\* Shujuan Meng and Lijuan Han\*

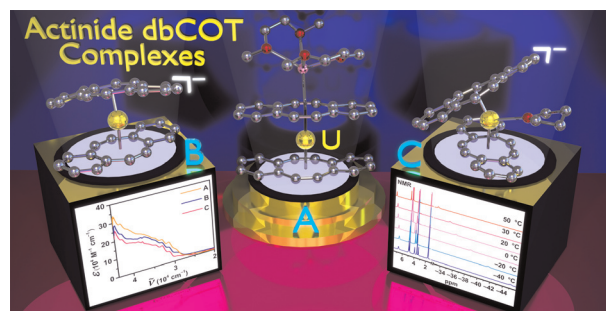


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### Introducing dibenzocyclooctatetraene into actinide chemistry: isolation of rare trivalent uranium sandwich complexes

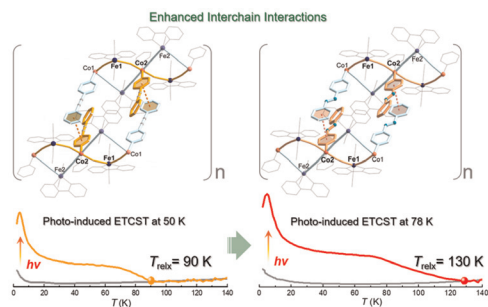
Ernesto Castellanos, Wei Su and Selvan Demir\*



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### Interchain interactions raised the photo-induced [LS] → [HS\*] transition temperature to 78 K in a cyanide-bridged [Fe<sub>2</sub><sup>III</sup>Co<sup>II</sup>] chain

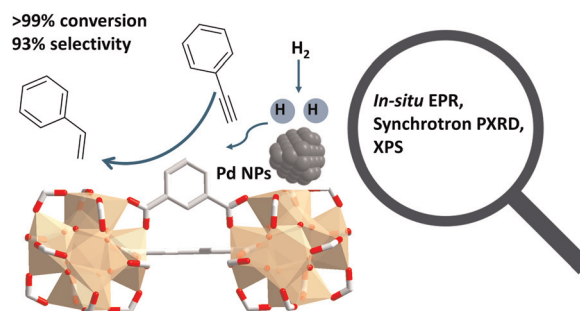
Wen-Jing Jiang, Yin-Shan Meng, Han-Han Lu, Hai-Lang Zhu, Qiang Liu, Chunying Duan, Hiroki Oshio\* and Tao Liu



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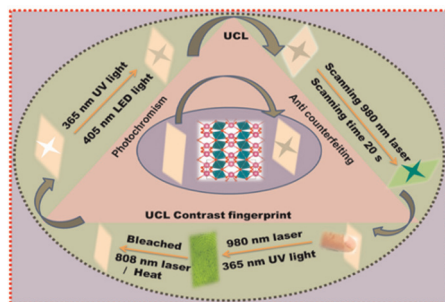
### A novel cerium-based metal–organic framework supported Pd catalyst for semi-hydrogenation of phenylacetylene

Xiangdi Zeng, Zi Wang, Meng He, Wanpeng Lu, Wenyuan Huang, Bing An, Jiangnan Li, Mufan Li, Ben F. Spencer, Sarah J. Day, Floriana Tuna, Eric J. L. McInnes, Martin Schröder\* and Sihai Yang\*



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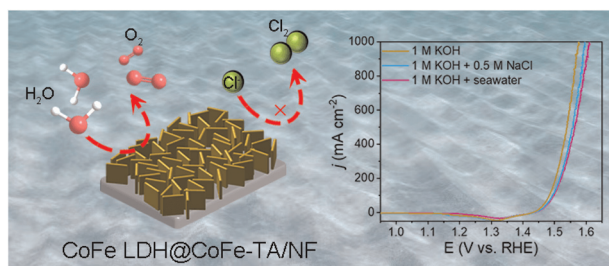
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### Dual-function applications of photochromic BiNbO<sub>4</sub>:Er<sup>3+</sup> ceramics based on reversible upconversion luminescence modulation

Asad Ullah, Imran Khan, Yangke Cun, Yue Liu, Zhiguo Song, Jianbei Qiu, Cherkasova Tatiana, Anjun Huang,\* Asif Ali Haider\* and Zhengwen Yang\*

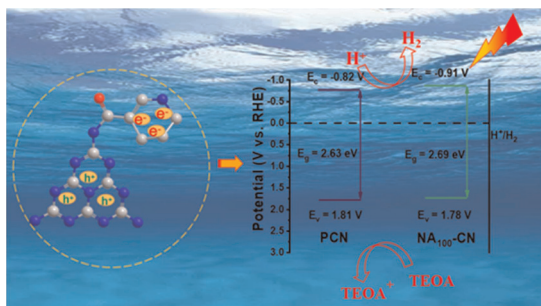
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### Tannic acid salt-modified CoFe-layered double hydroxide boosts stable seawater oxidation at an industrial-level current density

Zhengwei Cai, Yaxin Guo, Chaoxin Yang, Zixiao Li, Shengjun Sun, Meng Yue, Xiaoyan Wang, Min Zhang, Hefeng Wang, Yongchao Yao, Dongdong Zheng, Asmaa Farouk, Fatma A. Ibrahim, Yanqin Lv,\* Xuping Sun\* and Bo Tang\*

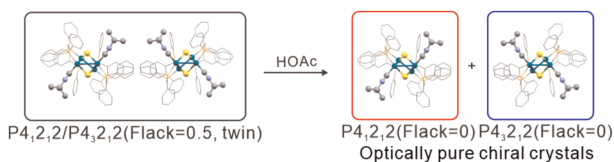
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### In situ construction of donor-acceptor structured g-C<sub>3</sub>N<sub>4</sub> nanotubes incorporated with pyridine heterocyclic rings for efficient photocatalytic water splitting

Bo Zhang, Wenjing Luo, Luye Pan, Chenhuan Tian, Peipei Sun, Pengcheng Yan,\* Xianglin Zhu, Haibo Wang,\* Zhao Mo\* and Hui Xu

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### Glacial acetic acid as a resolution solvent for growing enantiopure crystals from racemic mixtures

Hongwen Deng, Peng Yuan, Kejie Lao, Qijun Fu, Boon K. Teo\* and Nanfeng Zheng\*

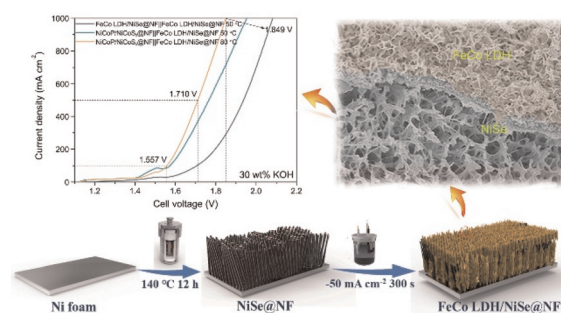


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### Hierarchical FeCo LDH/NiSe heterostructure electrocatalysts with rich heterointerfaces for robust water splitting at an industrial-level current density

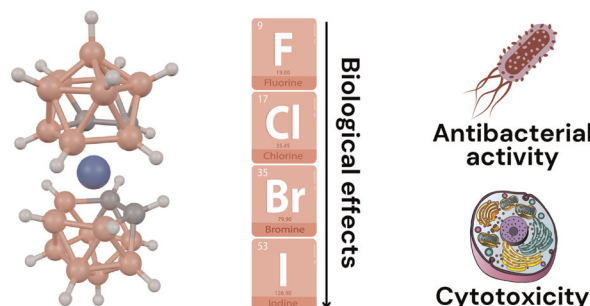
Weiwei Han, Wenyi Wang, Jiahong Liao, Yi He, Xingwang Zhang\* and Chunlin Yu\*



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### Unraveling the correlation between biological effects and halogen substituents in cobalt bis(dicarbollide)

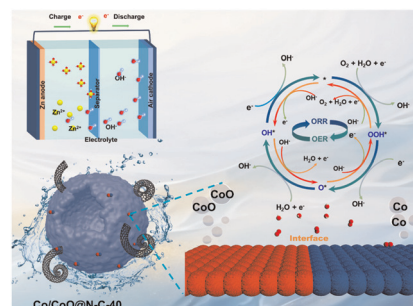
Katarzyna Zakret-Drozdowska, Bożena Szermer-Olearnik, Waldemar Goldeman, Michalina Gos, Dawid Drozdowski, Anna Gągor and Tomasz M. Goszczyński\*



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### Heterogeneous interface engineering to enhance oxygen electrocatalytic activity for rechargeable zinc-air batteries

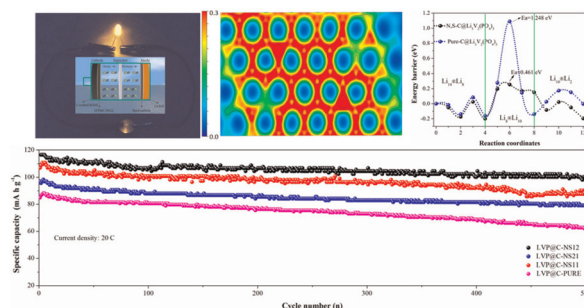
Tao-Tao Li, Yu-Rui Ji, Yi-Meng Wu, Peng-Fei Wang, Zong-Lin Liu, Jie Shu and Ting-Feng Yi\*



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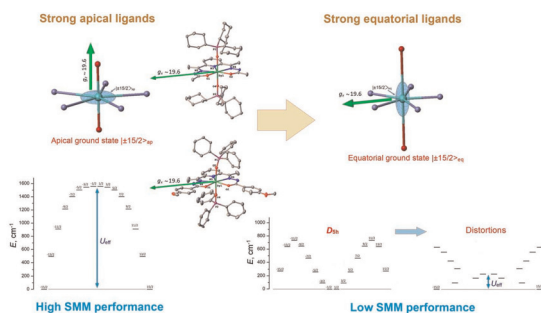
### Li<sub>3</sub>V<sub>2</sub>(PO<sub>4</sub>)<sub>3</sub> particles embedded in a N and S co-doped porous carbon cathode for high performance lithium storage: an experimental and DFT study

Jinggao Wu,\* Canyu Zhong, Xiaofan Chen and Jing Huang\*



## RESEARCH ARTICLES

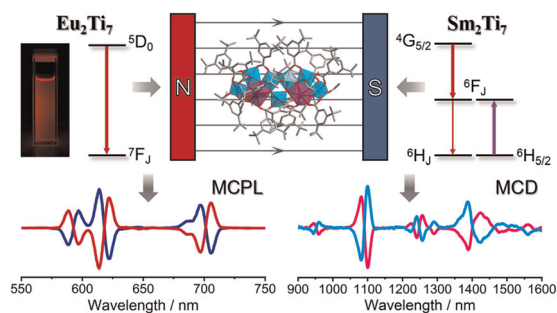
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### Pentagonal-bipyramidal dysprosium(III) complexes with two apical phosphine oxide ligands and equatorial pentadentate $N_3O_2$ Schiff-base ligands: breakdown of the apical magnetic axiality by a strong equatorial crystal field

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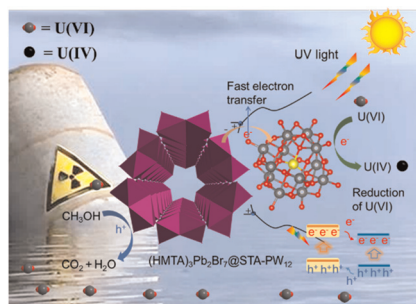
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### Magneto-optical response and luminescence properties of lanthanide-titanium-oxo clusters $Eu_2Ti_7$ and $Sm_2Ti_7$

Wei-Dong Liu, Han Xu, Chong-Yang Li, La-Sheng Long, Lan-Sun Zheng and Xiang-Jian Kong\*

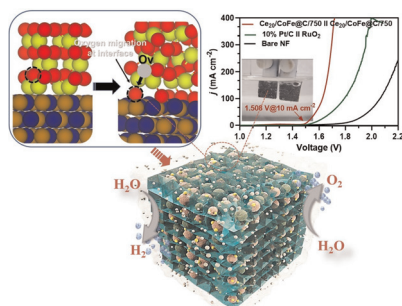
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### Water-stable perovskite nanotube array with enhanced transport of charge carriers induced by functionalized polyoxometalate for the highly efficient photoreduction of uranium(VI)

Yanli Yang, Keke Guo, Xue Bai, Maochun Zhu, Siyue Wang and Shuxia Liu\*

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### Interface engineering of highly stable $CeO_2/CoFe@C$ electrocatalysts for synergistically boosting overall alkaline water splitting performance

Waleed Yaseen, Karim Harrath, Guangya Li, Bashir Adegbemiga Yusuf, Suci Meng,\* Meng Xie, Iltaf Khan, Jimin Xie, Changkun Xia and Yuanguo Xu\*

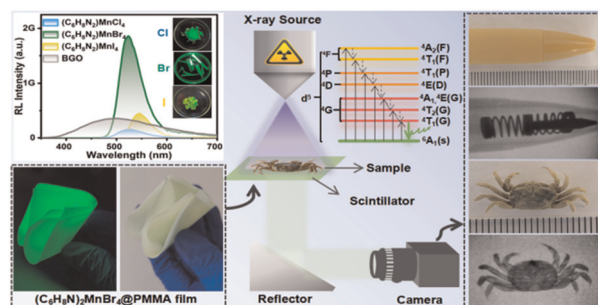


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### Modulation of halogens in organic manganese halides for high-resolution and large-area flexible X-ray imaging

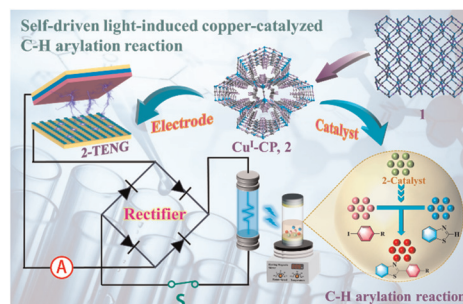
Ying Sun, Qian Ma, Dongheng Zhao, Pan Gao, Qi Wang, Zeyu Guo and Xiaomei Jiang\*



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### A dual-purpose copper(I) coordination polymer for the construction of self-driven photoinduced C–H arylation systems

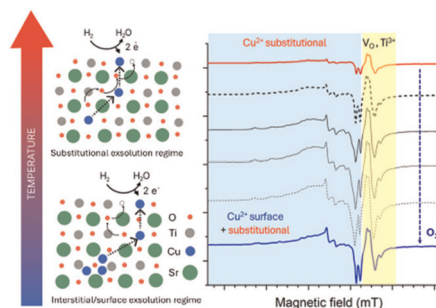
Yue Zhang, Ying-Ying Zhang,\* Shuo Li, Fei Wang, Yuanmeng Tao, Jiaying Cui, Chao Huang\* and Liwei Mi\*



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### Critical assessment of the exsolution process in Cu-doped SrTiO<sub>3</sub> by a combined spectroscopic approach

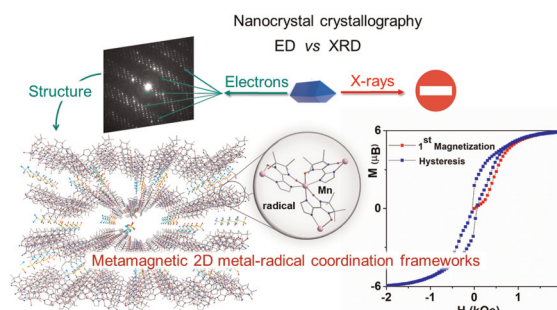
Pietro Mariani, Xiao Sun, Simone Mascotto,\* Luisa Raimondo, Adele Sassella, Damiano Monticelli, Enrico Berretti, Alessandro Lavacchi, Matus Stredansky, Cinzia Cepek, Silvia Mostoni, Carlo Santoro, Barbara Di Credico, Roberto Scotti and Massimiliano D'Arienzo\*



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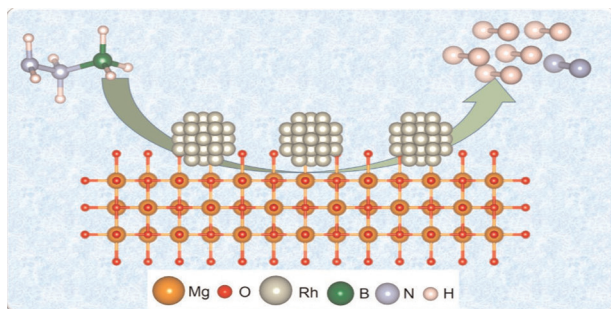
### Electron diffraction unveils the 2D metal-radical framework of two molecule-based magnets

Emre Yörük, Constance Lecourt, Dominique Housset, Yuuta Izumi, Wai Li Ling, Stéphanie Kodjikian, Evgeny Tret'yakov, Katsuya Inoue, Kseniya Maryunina, Cédric Desroches, Holger Klein and Dominique Luneau\*



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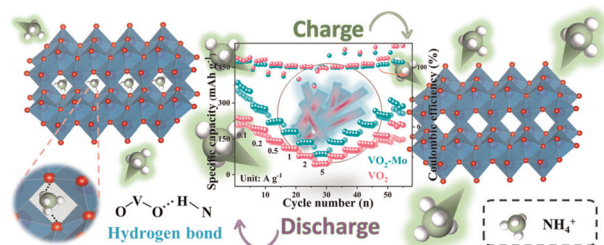
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### High-performance Rh@MgO catalysts for complete dehydrogenation of hydrazine borane: a comparative study

Ahmet Bulut, Mustafa Erkartal,\* Mehmet Yurderi, Tuba Top and Mehmet Zahmakiran\*

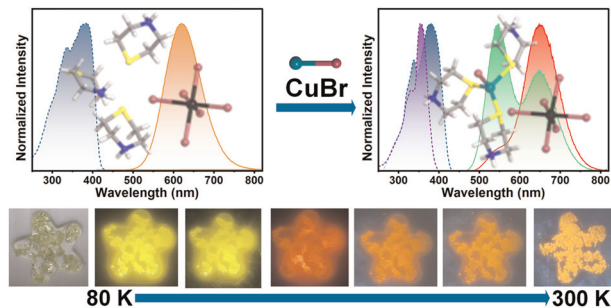
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### Tailoring electronic structure to enhance the ammonium-ion storage properties of VO<sub>2</sub> by molybdenum doping toward highly efficient aqueous ammonium-ion batteries

Yifu Zhang,\* Zhenhua Zhou, Xianfang Tan, Yanyan Liu, Fangfang Zhang, Changgong Meng and Xiaoming Zhu\*

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### Integrating multiple emission centers for photoluminescence regulation in copper–antimony/bismuth halides

Abdusalam Ablez, Hao-Wei Lin, Sheng-Mao Zhang, Guo-Yang Chen, Jia-Hua Luo, Ke-Zhao Du,\* Ze-Ping Wang\* and Xiao-Ying Huang\*

## CORRECTION

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### Correction: Amorphous heterojunction and fluoride-induced effects enable a F-Ni(OH)<sub>2</sub>/Ni-B electrocatalyst for efficient and stable alkaline freshwater/seawater hydrogen evolution at a high current density

Shenyi Chen, Haoming Chu, Ziyin Xie, Lihui Dong, Bin Li, Minguang Fan, Huibing He and Zhengjun Chen\*

