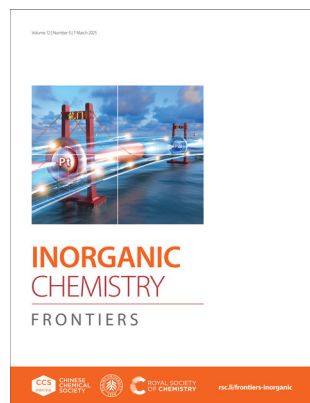


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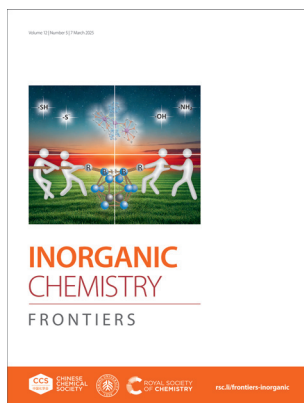
ISSN 2052-1553 CODEN ICFNAW 12(5) 1731–2124 (2025)



Cover

See Yuzhen Zhang *et al.*, pp. 1812–1821.

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Inside cover

See Zsolt Kelemen *et al.*, pp. 1822–1830.

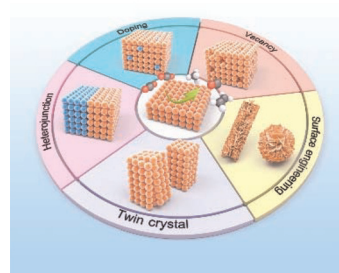
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REVIEWS

1743

Optimization of electronic structure by defect engineering for electrocatalytic carbon dioxide reduction reaction

Jinghan He, Jianxin Qiang, Yang-Fan Xu,* Zhan Shi, KeKe Huang* and Xiangdong Yao*



1773

Bi₂MO₆ (M = Mo, W) Aurivillius oxides for efficient photocatalytic N₂-to-NH₃ conversion: a perspective review

Xin Huang, Razium Ali Soomro, Huidong Shen, Li Guo,* Chunming Yang* and Danjun Wang*



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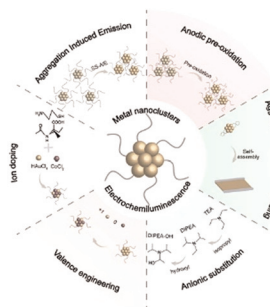
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REVIEWS

1798

Design strategies and applications of electrochemiluminescence from metal nanoclusters

Tingting Li, Jiyu Sui, Weinan Dong, Yu Zhang, Ying Zhang,* Yanan Li,* Zhennan Wu* and Xue Bai

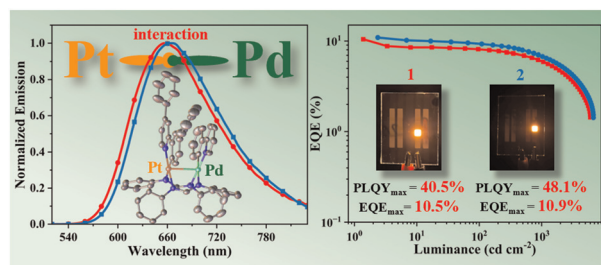


RESEARCH ARTICLES

1812

Heteronuclear Pt^{II}–Pd^{II} dimers formation through ligands subtle tailoring

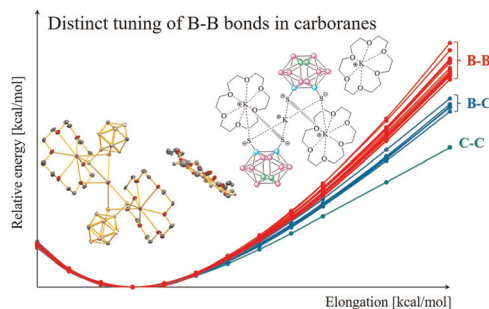
Peng Fan, Lequn Yuan and Yuzhen Zhang*



1822

The “chemical tug-of-war” in carborane clusters: distinct tuning on different sides of the cluster

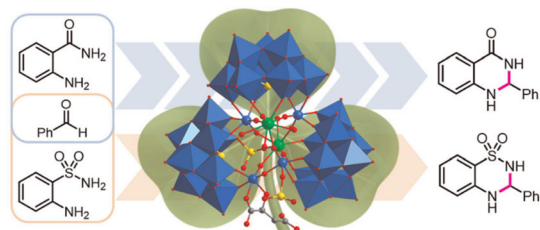
Dániel Buzsáki, Dalma Gál, Balázs Szathmári, Tamás Holczbauer, Antal Udvardy, Júlia Kertész Szilágyiné, Denis Kargin, Clemens Bruhn, Rudolf Pietschnig and Zsolt Kelemen*



1831

Praseodymium–selenium connecting selenotungstate containing mixed building blocks for catalytic synthesis of aza-heterocycles

Guoping Yang, Jiawei Cao, Zhoufu Lin, Shixiong Li,* Yayu Dong* and Yufeng Liu*

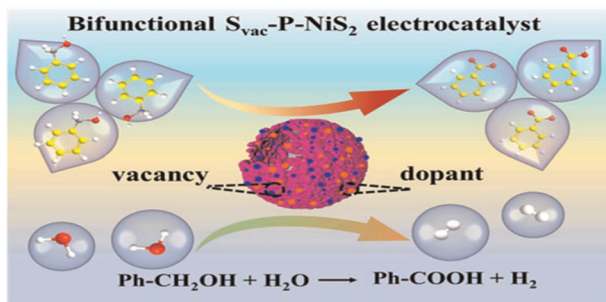


- Mixed building block-constructed POMs
- High catalytic activity
- Green solvent
- Broad substrate scope
- Valuable aza-heterocycles



RESEARCH ARTICLES

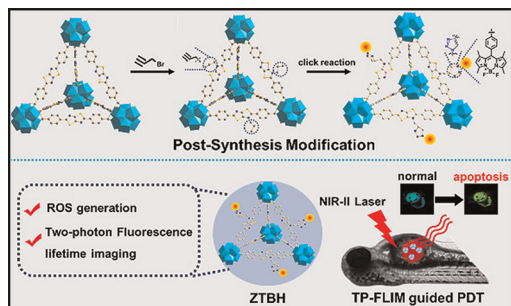
1839



Vacancy formation mechanism and synergy with doping in NiS_2 -based electrocatalysts for benzyl alcohol oxidation and hydrogen evolution

Fang Li, Haili Lin, Huiqin Yu, Pengfei Du, Yang Wang* and Jing Cao*

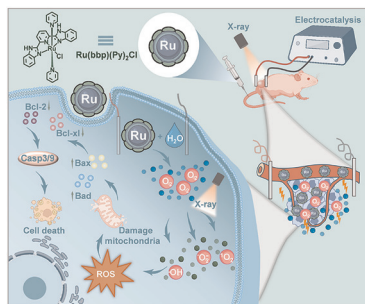
1850



Fluorescence lifetime imaging-guided photodynamic therapy over two-photon responsive metal–organic frameworks

Bo Li, Xin Lu,* Xianshun Sun, Hongping Zhou, Yupeng Tian, Zijuan Hai* and Dandan Li*

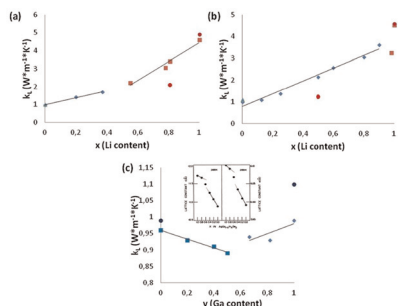
1857



In situ oxygen generation by a low-toxicity ruthenium electrocatalyst for multimodal radiotherapy sensitization

Mingkai Chen, Hanlong He, Jinrong Dong, Peng Xie, Jingyan Chen, Li Ma* and Tianfeng Chen*

1867



Thermal conductivity and balanced performance in infrared nonlinear optical multicomponent chalcogenides $\text{Li}_x\text{Ag}_{1-x}\text{Ga}_y\text{In}_{1-y}\text{Se}_2$

L. I. Isaenko,* Bohui Xu, K. E. Korzhneva, Pifu Gong, D. A. Samoshkin, A. F. Kurus and Zheshuai Lin*

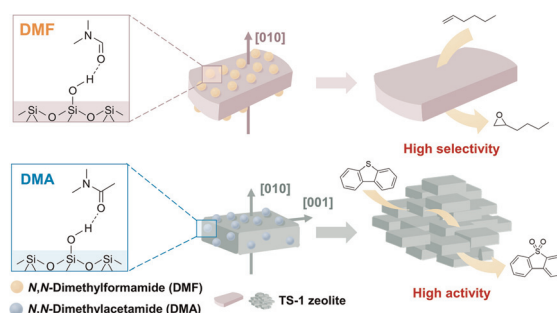


RESEARCH ARTICLES

1874

Regulation of TS-1 zeolite morphology by crystallization modifiers to boost the oxidative reactions

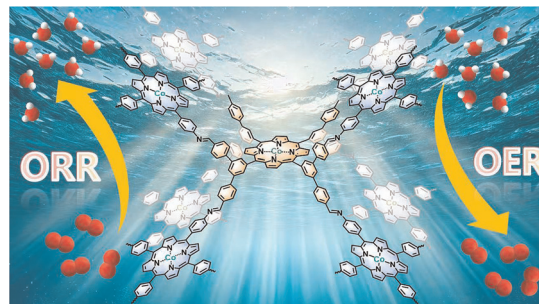
Jiani Zhang, Risheng Bai, Shiyu Zhou and Jiyang Li*



1881

Three-dimensional porphyrin-based covalent organic frameworks as bifunctional electrocatalysts for oxygen reduction and evolution reactions

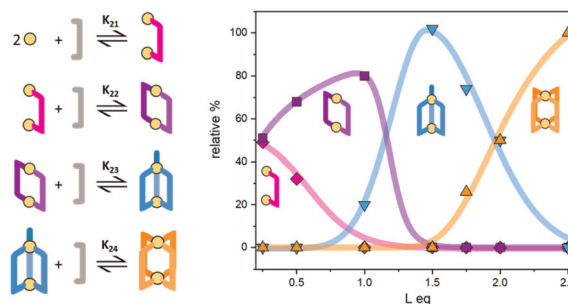
Li Liao, Rui Wang, Zerong Zhang, Jianfeng Zhang, Shibin Huang, Wenhao Xie, Yiji Wang, Ming Xue,* Qianrong Fang* and Shilun Qiu*



1890

Unravelling the formation pathway and energetic landscape of lanthanide cages based on bis-β-diketonato ligands

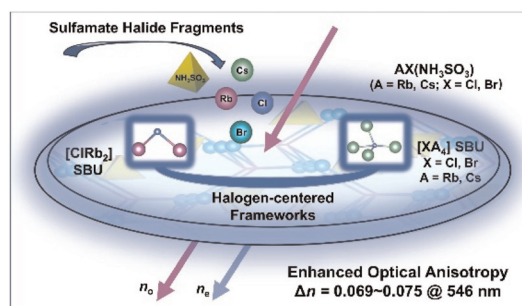
Maria Rando, Alice Carlotto, Silvia Carlotto, Roberta Seraglia, Marzio Rancan* and Lidia Armelao



1900

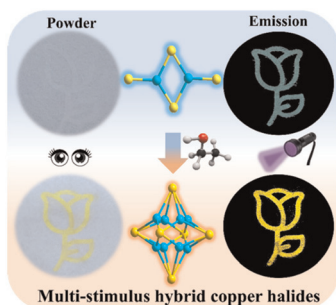
Deep-ultraviolet sulfamate halides with halogen-centered secondary building units for enhanced optical anisotropy

Xuefei Wang, Qingwen Zhu, Yunseung Kuk, Hongheng Chen, Qi Wu,* Qun Jing* and Kang Min Ok*



RESEARCH ARTICLES

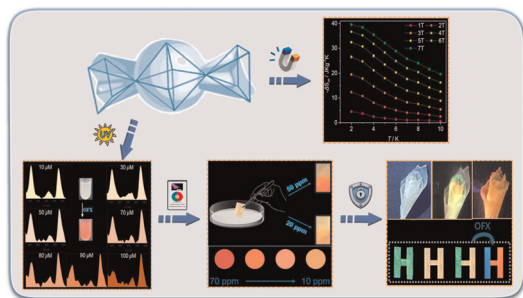
1909



Multiple stimuli dual-optical mode responsive hybrid copper(I) halides for advanced anti-counterfeiting and information encryption

Yue Guo, Yi-Fan Fu, JiaJing Wu,* Jing-Li Qi, Yu-Mei Zhang, Qiao-Feng Huang, Wenlong Liu and Sheng-Ping Guo*

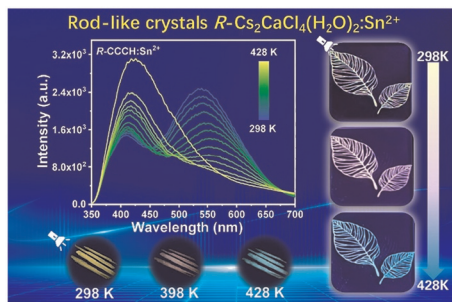
1918



Tunable luminescent lanthanide cluster-based hydrogel probe for ratiometric detection of ofloxacin, anti-counterfeiting, and magnetocaloric applications

Tian-Tian Wang, Hao Wang and Wen-Bin Sun*

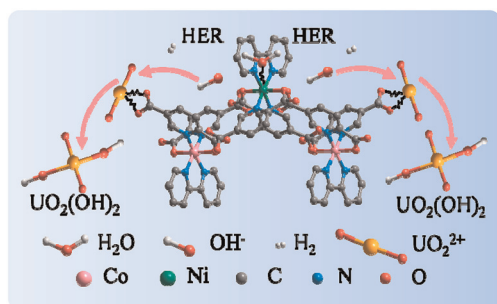
1927



Dual-band white light emission and temperature-dependent luminescence of Sn^{2+} in the metastable structure of $\text{Cs}_2\text{CaCl}_4(\text{H}_2\text{O})_2$

Hu Wang, Yuexiao Pan,* Zhenyu Shi, Yeling Cao, Hongzhou Lian, Jun Lin,* Qian Miao and Jun Zou*

1935



Modulating the electronic structure of a hydrogen-bonded organic framework to enhance uranium removal via the hydrogen evolution reaction

Qingsong Zhang,* Yuyang Miao, Yang Xiao,* Jianwei Hu, Haiyi Gong and Qingyi Zeng*

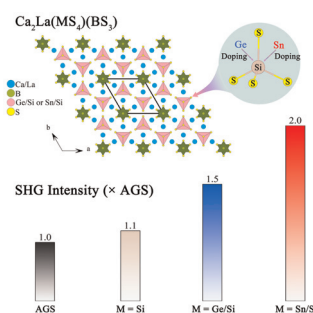


RESEARCH ARTICLES

1950

**$\text{Ca}_2\text{La}(\text{MS}_4)(\text{BS}_3)$ ($\text{M} = \text{Ge/Si}$ and Sn/Si):
high-performance infrared nonlinear optical
materials designed using an atomic site
co-occupancy strategy**

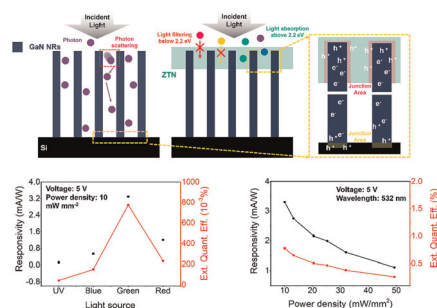
Ya-Xiang Han, Chun-Li Hu and Jiang-Gao Mao*



1958

**Monolithic green-sensitive photodetectors
enabled by a $\text{ZnSnN}_2/\text{GaN}$ nanorods/silicon double
heterojunction**

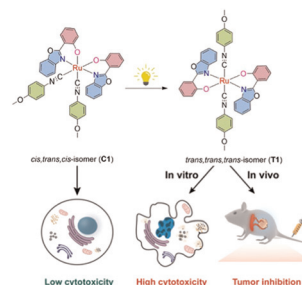
Jeong Hyeon Kim, Juchan Hwang, Soon Joo Yoon, Jongmin Kim, Yoon Kyeong Lee, Kwangwook Park* and Han Eol Lee*



1969

**Transformable *cis*–*trans* isomerism of ruthenium(II)
complexes with photoactivated anticancer activity**

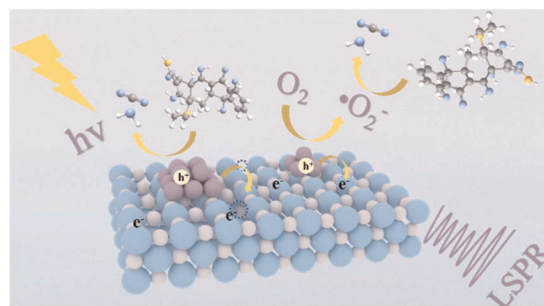
Chen Pan, Pui-Yu Ho, Wan-Qiong Huang, Gui-Feng Huang, Li-Hua Zhang, Daniel Nnaemaka Tritton, Shek-Man Yiu, Wai-Lun Man, Chi-Chiu Ko, Chi-Fai Leung* and Wen-Xiu Ni*



1979

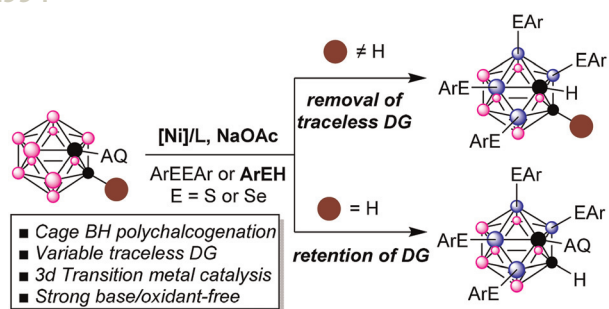
**Synergistic introduction of LSPR effect and
Schottky junction: Cu@TiO_2 charge regulation
achieved efficient, stable photocatalytic removal**

Shuzhe Zhang, Xiumei Li, Ruyan Xie, Xiaozhen Zhang, He Wang, Yanhua Song and Haifeng Zou*



RESEARCH ARTICLES

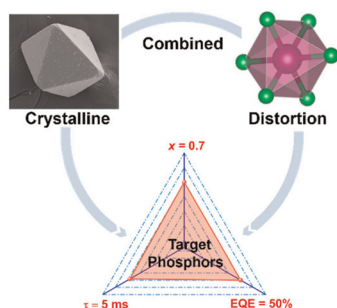
1994



A variable bidentate traceless directing group for nickel-catalyzed regioselective B–H poly-chalcogenation of o-carboranes

Ping Li, Zihuan Qiu, Jian Lu* and Ju-You Lu*

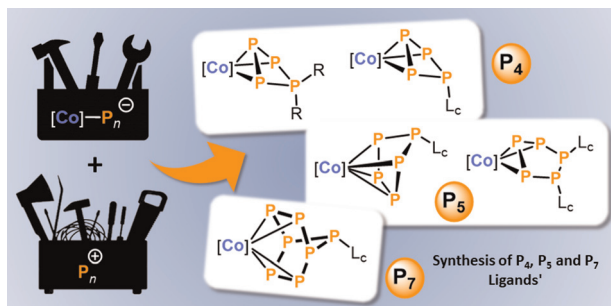
2003



Photoluminescence enhancement of Mn⁴⁺-doped Rb₂NaAlF₆ single-crystal phosphors via heterovalent co-doping for wide gamut displays

Zhen Chen, Chuang Zhang, Yuanjing Wang,*
Hong Ming, Yayun Zhou, Enhai Song* and
Qinyuan Zhang*

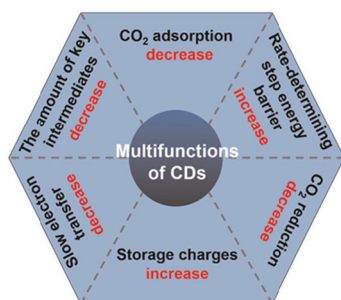
2013



Phosphorus ring expansion at cobalt: targeted synthesis of P₄, P₅, and P₇ ligands

Karolina Trabitsch, Sebastian Hauer, Kai Schwedtmann,
Philipp Royla, Jan J. Weigand* and Robert Wolf*

2024



Multifunctions of carbon dots in the CeO₂/Cu₂O complex catalyst for the regulation of carbon dioxide reduction

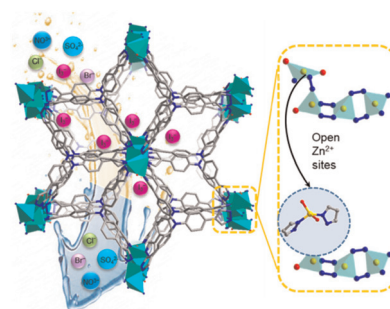
Xiong Yan, Jiacheng Li, Honglin Si, Haojie Xu,
Hui Huang,* Yang Liu* and Zhenhui Kang*

RESEARCH ARTICLES

2036

Pyrazolate-based MOFs with open Zn^{2+} sites for highly effective and rapid adsorption of iodine in water

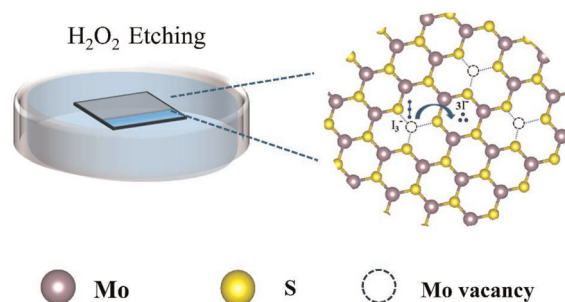
Xin-Dan Zhang, Yong-Zheng Zhang,* Tingting Li, Yu-Xiang Zuo, Xiao-Nan Li, Da-Shuai Zhang, Longlong Geng, Bin Wang,* Hongliang Huang* and Xiuling Zhang*



2047

Strategic design of vacancies and phase in flexible MoS_2 for boosting triiodide reduction performance

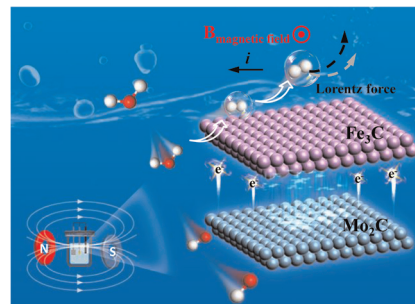
Xu Cai, Xuan Wang, Bixue Sun, Chenzhao Yang, Mingzhu Chen, Shuang Lu,* Yinglin Wang and Xintong Zhang



2058

Magnetic-field enhanced interfacial electron redistribution to promote magnetoelectrocatalytic hydrogen evolution

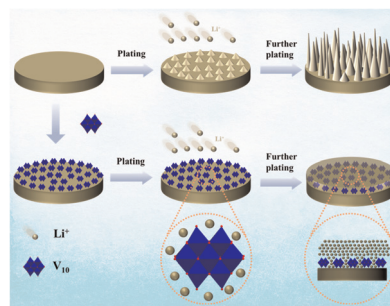
Chong Liu, Lianqing Yu,* Nannan Chen, Gege Tian and Haifeng Zhu*



2070

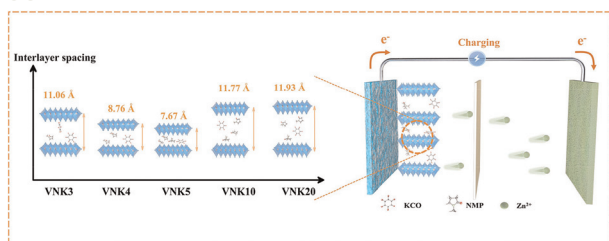
Utilizing decavanadate as an artificial solid electrolyte interface to effectively suppress dendrite formation on a lithium metal anode

Jian Song, Yuanyuan Jiang, Yizhong Lu,* Changhao Zhao, Yundong Cao, Linlin Fan,* Hong Liu and Guanggang Gao*



RESEARCH ARTICLES

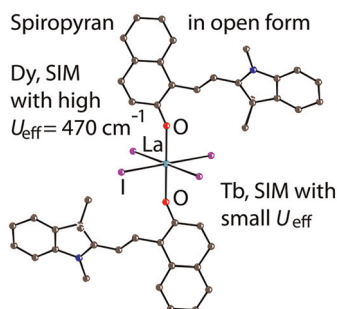
2081



Layered vanadium oxide with tunable layer spacing via dual organic molecule co-insertion for advanced aqueous zinc-ion batteries

Hong Ding, Tiantian Li, Chengyu Liu, Jiali Wang, Tengfei Zhang, Long Chen, Haijiao Xie, Gang Wang* and Tiantian Gu*

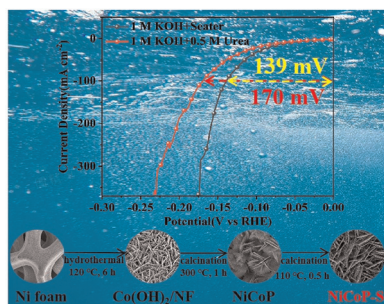
2092



Complexes $(TBA^+)((TMI-NPS)_2 \cdot Ln^{III}I_4)^-$ ($Ln = Dy, Tb$) with two axial photochromic spiropyran ligands: photoswitching and zero-field SIM behaviour with a high magnetization blocking barrier for the Dy complex

Nikita G. Osipov, Maxim A. Faraonov, Aleksey V. Kuzmin, Salavat S. Khasanov, Alexey A. Dmitriev, Nina P. Gritsan,* Nikolay N. Denisov, Akihiro Otsuka, Hiroshi Kitagawa and Dmitri V. Konarev*

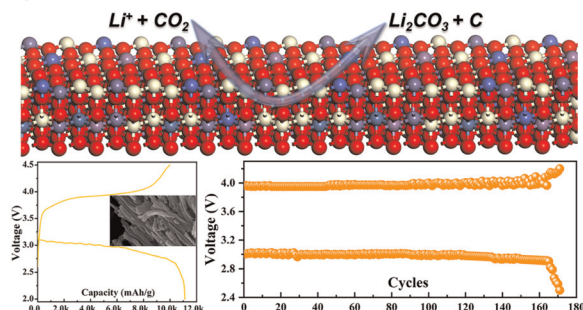
2103



Synthesis of anion M-doped NiCoP ($M = S, Se$ and N) as bifunctional catalysts for alkaline seawater and urea splitting

Han Zhao, Min Liu, Xiaoqiang Du* and Xiaoshuang Zhang

2113



Robust fluorite-structured high-entropy oxides with integrated multi-active site construction for catalytic cathodes of Li-CO₂ batteries

Qinghua Deng,* Dan Chen, Shi Zhang, Yuan Chen, Hanbo Zeng, Xuguang Li, Sike Zhang and Tianyu Wang*

