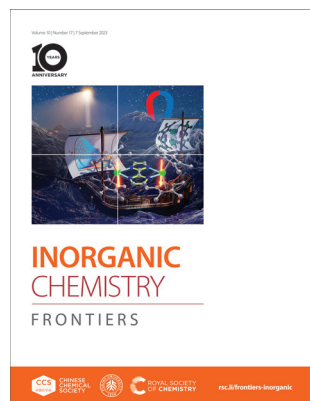


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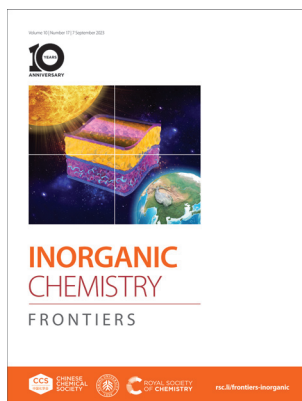
ISSN 2052-1553 CODEN ICFNAW 10(17) 4891–5200 (2023)



Cover

See Florian Benner and Selvan Demir, pp. 4981–4992.

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Inside cover

See Lianfeng Duan, Fushen Lu *et al.*, pp. 4993–5003.

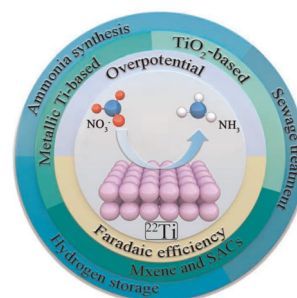
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REVIEWS

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Recent developments in Ti-based nanocatalysts for electrochemical nitrate-to-ammonia conversion

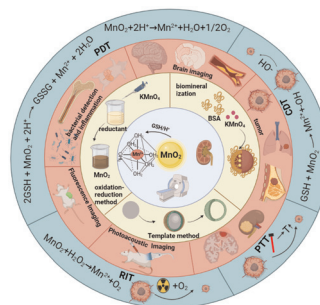
Wenda Chen, Yuan Xu, Jiaxin Liu, Huiqun Cao, Yongliang Li, Xiangzhong Ren, Shenghua Ye,* Jianhong Liu* and Qianling Zhang*



4918

Advances in the application of manganese dioxide and its composites for theranostics

Jiaqi Hao, Yu Zhao, Yiqi Ma, Beibei Liu, Yonglan Luo, Sulaiman Alfaifi, Xuping Sun* and Min Wu*



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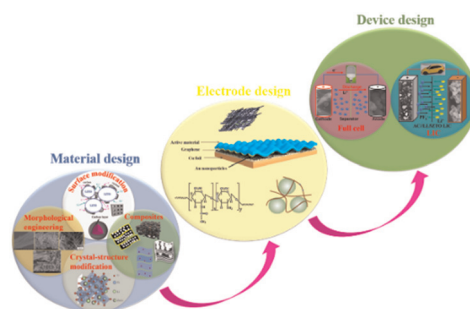


REVIEWS

4943

Li₂ZnTi₃O₈ anode: design from material to electrode and devices

Huanhuan Liu, Xue Zhang, Haoran Xu, Wenzhao Ma, Lijuan Wang,* Zhaohui Meng* and Fei Wang*

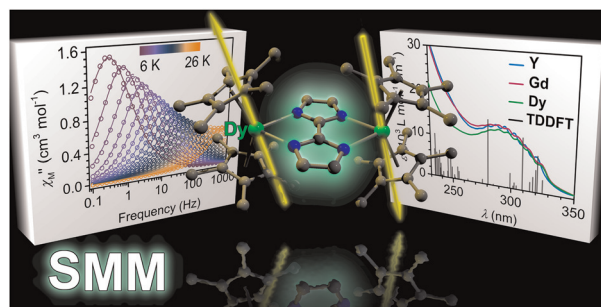


RESEARCH ARTICLES

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From unprecedented 2,2'-bisimidazole-bridged rare earth organometallics to magnetic hysteresis in the dysprosium congener

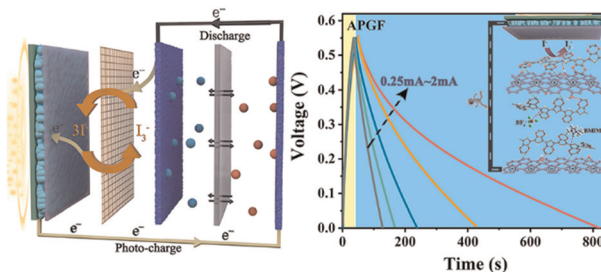
Florian Benner and Selvan Demir*



4993

Compatible and high-efficiency quasi-solid-state integrated photocapacitor based on the synergism of PEDOT/RGO electrode and gel electrolyte to improve the carrier migration

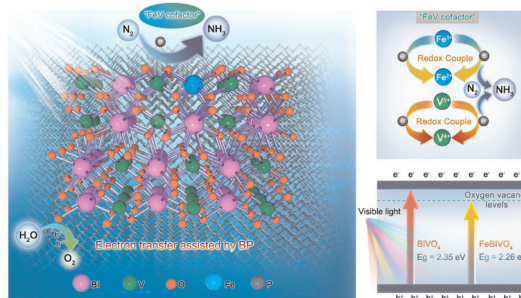
Yuan duo Qu, Siqi Liao, Liangyi Wu, Junkai Wang, Lianfeng Duan,* Xia He and Fushen Lu*



5004

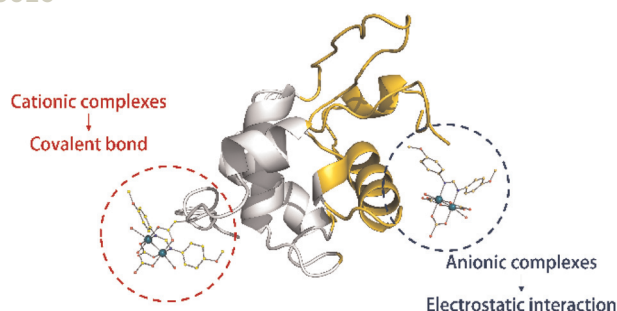
“FeV-cofactor”-inspired bionic Fe-doped BiVO₄ photocatalyst decorated with few-layer 2D black phosphorus for efficient nitrogen reduction

Hongda Li, Shuai Jian, Boran Tao, Guoxiao Xu, Baosheng Liu, Shaonan Gu,* Guofu Wang* and Haixin Chang*



RESEARCH ARTICLES

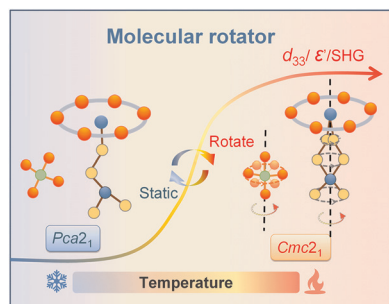
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Charge effect in protein metalation reactions by diruthenium complexes

Aarón Terán, Giarita Ferraro, Ana E. Sánchez-Peláez, Santiago Herrero* and Antonello Merlino*

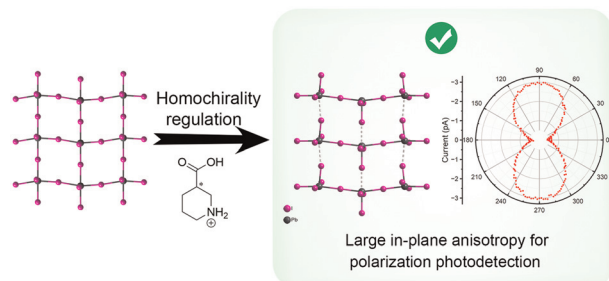
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Remarkable enhancement of optical and electric properties by temperature-controlled solid-phase molecular motion

Meng-Meng Lun, Chang-Yuan Su, Qiang-Qiang Jia, Zhi-Xu Zhang, Jie Li, Hai-Feng Lu,* Yi Zhang* and Da-Wei Fu*

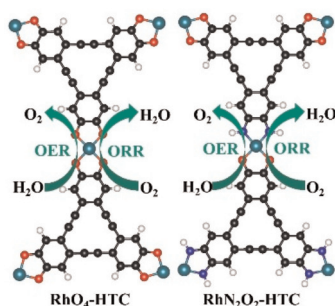
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Large in-plane anisotropic 2D perovskites toward highly linear polarized light responses

Bei-Dou Liang, Chang-Chun Fan, Cheng-Dong Liu, Tong-Yu Ju, Chao-Yang Chai,* Xiang-Bin Han* and Wen Zhang*

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Two-dimensional conductive metal–organic frameworks as efficient electrocatalysts for oxygen evolution and reduction reactions

Yanan Zhou, Li Sheng, Lanlan Chen, Qiquan Luo, Wenhui Zhao,* Wenhua Zhang* and Jinlong Yang*



Rational construction of VSe₂ encapsulated in seleniumized polyacrylonitrile toward a high-rate capacity and wide temperature tolerance for potassium-ion batteries

A three-dimensional Mn(II) coordination polymer with ferroelasticity obtained by introducing coligands to form novel networks

Novel ferroelastic 3D coordination polymer

UV OFF \longleftrightarrow UV ON

Crystal Powder Crystal Powder

Paraelastic Ferroelastic

mmmF2/m

Legend: Mn (blue), C (grey), N (green), O (red), P (orange)

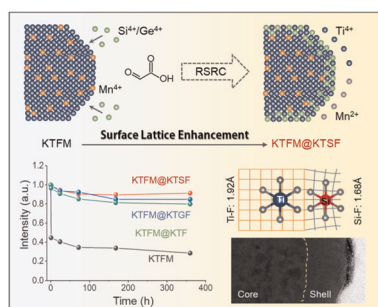
Co-doped long persistent luminescence materials $\text{LiSr}_3\text{SiO}_4\text{Cl}_3\text{:Eu}^{2+}, \text{Ln}^{3+}$ (Ln = Dy, Ho, Er): construction and verification of VRBE and HRBE scheme and their multifunctional applications

Figure 1 consists of four panels. Panel (a) shows HRBE and VRBE spectra of LSSOC-Eu³⁺Dy³⁺ complexes. The HRBE spectrum (left y-axis, 0 to -2 eV) shows peaks for Eu³⁺ (red) and Dy³⁺ (blue) ions. The VRBE spectrum (right y-axis, 0 to 14 eV) shows peaks for Eu³⁺ (red) and Dy³⁺ (blue) ions. Panel (b) shows a plot of ln(T₂/β) vs. 1/(hν_{1/2}) for LSSOC-Eu³⁺Dy³⁺ complexes. The plot shows two linear regions with slopes of -1.26 and -1.20. Panel (c) shows SEM images of LSSOC-Eu³⁺Dy³⁺ complexes. The images show the morphology of the complexes at different magnifications. Panel (d) shows PL intensity and decay time of LSSOC-Eu³⁺Dy³⁺ complexes. The plot shows PL intensity (left y-axis, 10⁰ to 10⁴ a.u.) and decay time (right y-axis, 0 to 0.32 ms) vs. decay time (x-axis, 0 to 10 ms). The inset shows a zoomed-in view of the decay time region.

Fast rotating dipole array inducing large dielectric response in a Ruddlesden–Popper hybrid perovskite ferroelastic

RESEARCH ARTICLES

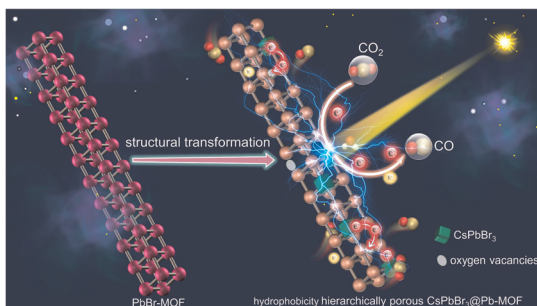
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Surface lattice enhancement of red-emitting fluorides enabled by embedding small cations

Pingping Wan, Chen Yang, Aolin Wang, Liping Yu, Shixun Lian and Wenli Zhou*

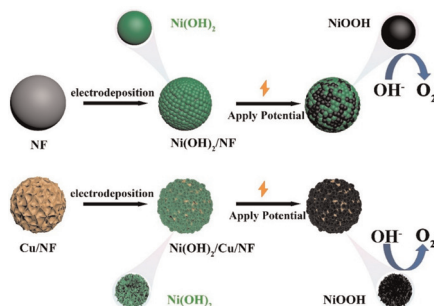
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Oxygen vacancies confined in hierarchically porous CsPbBr₃@Pb-MOF through *in situ* structural transformation for promoting photocatalytic CO₂ reduction

Yangwen Hou, Man Dong, Jingting He, Jing Sun, Chunyi Sun,* Xiao Li, Xinlong Wang and Zhongmin Su*

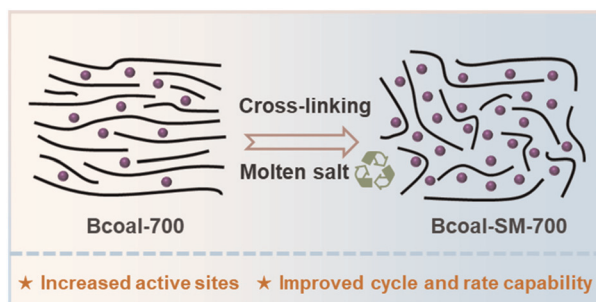
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A copper interface promotes the transformation of nickel hydroxide into high-valent nickel for an efficient oxygen evolution reaction

Junjun Zhang, Fengchen Zhou, Aiming Huang, Yong Wang, Wei Chu* and Wen Luo*

5117



Molten salt assisted fabrication of coal-based carbon anode materials for efficient Na ion storage

Wei Zhang, Ning Sun,* He Chen, Razium Ali Soomro and Bin Xu*

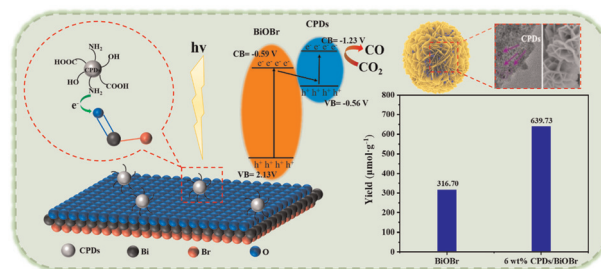


RESEARCH ARTICLES

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Up-conversion effect boosted the photocatalytic CO₂ reduction activity of Z-scheme CPDs/BiOBr heterojunction

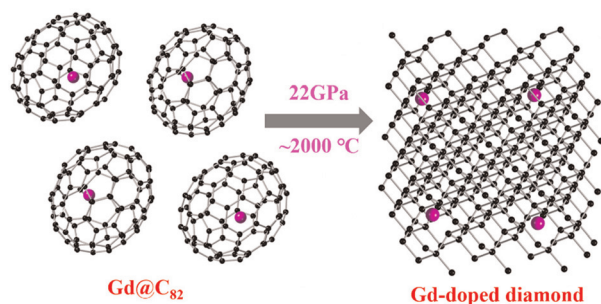
Jing Xie,* Xiaojing Zhang, Zhenjiang Lu, Jindou Hu, Aize Hao, Yue Feng and Yali Cao*



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Gd-doped diamond synthesized using Gd@C₈₂ under high pressure and high temperature

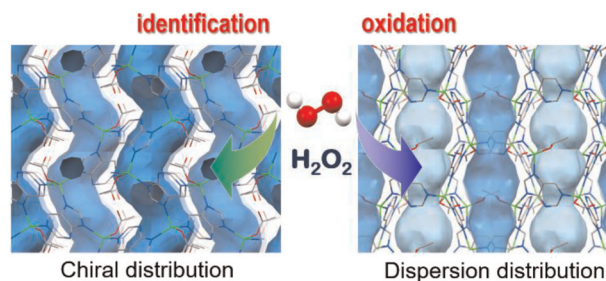
Shuhang Liu, Jun Han, Rongli Cui, Xin Yang, Yunfan Fei, Xingyu Tang, Yida Wang, Yajie Wang, Yongjin Chen, Jiajia Feng, Haiyan Zheng, Kuo Li* and Xiaoyang Liu*



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Recognition, detection and host–guest chemistry of hydrogen peroxide in a fluorescent metal–organic framework with chiral helical channels

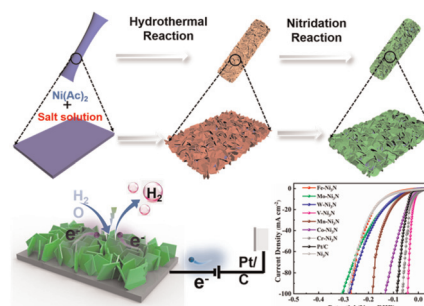
Hong Cai,* Jie-Wen Wu, Xiao-Jun Cai, Zhou Lu, Ya-Liang Lai, Jing-Xuan Sun, Zhuo-Li Yuan, Yang-Ying Huang, Jing-Wen Cai, Wen Lu, Yi-Hong Lu, Hui-Ying Zhang and Dan Li*



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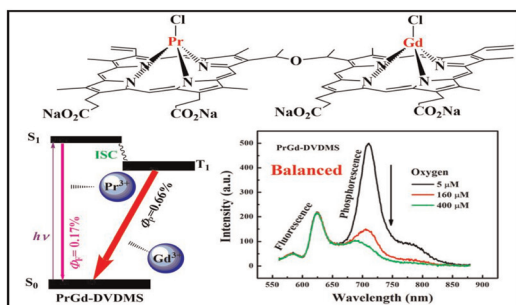
Formulating a heterolytic cleavage process of water on Ni₃N nanosheets through single transition metal doping for ultra-efficient alkaline hydrogen evolution

Wansen Ma, Meng Wang, Chaowen Tan, Jiancheng Wang, Yanan Dai, Liwen Hu, Xuwei Lv, Qian Li and Jie Dang*



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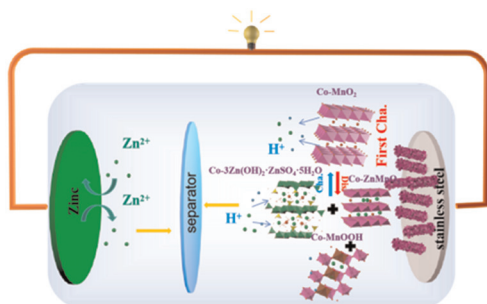
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Balancing the phosphorescence and fluorescence of a double-ring porphyrin using different lanthanides for ratiometric oxygen sensing

Huimin Zhao,* Qingqing Wang, Shumin Wang, Junyue Yin, Huibin Wang, Wenhao Shao, Zixin Yao, Jianting Yao and Lixin Zang*

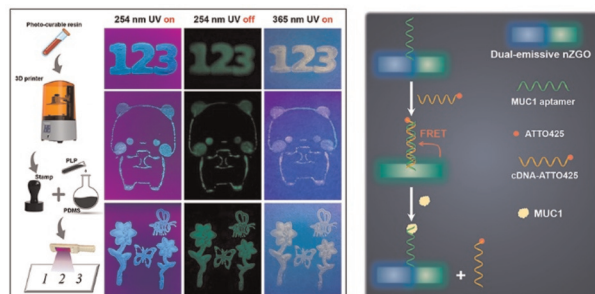
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Cobalt-doped δ -MnO₂/CNT composites as cathode material for aqueous zinc-ion batteries

ShuLing Liu,* Jie Wang, ZiXiang Zhou, Ying Li, Wei Zhang and Chao Wang

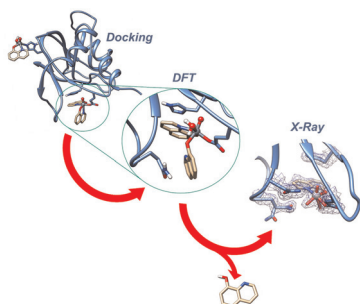
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Dual-emissive persistent luminescent phosphors for multi-mode anti-counterfeiting and ratiometric luminescent aptasensors

Peng Lin, Junpeng Shi,* Lin Liu, Yile Kang, Liang Song, Maochun Hong* and Yun Zhang*

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Interaction of V^{IV}O–8-hydroxyquinoline species with RNase A: the effect of metal ligands in the protein adduct stabilization

Giarita Ferraro, Luigi Vitale, Giuseppe Sciortino, Federico Pisanu, Eugenio Garribba* and Antonello Merlino*

