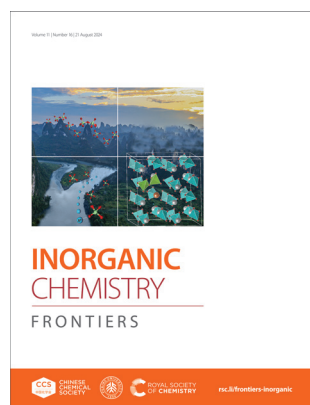


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ISSN 2052-1553 CODEN ICFNAW 11(16) 4889-5362 (2024)



Cover

See Xiaoyan Yang *et al.*, pp. 5014–5025.

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EDITORIAL

4902

Inorganic Chemistry Frontiers welcomes the inaugural Early Career Advisory Board

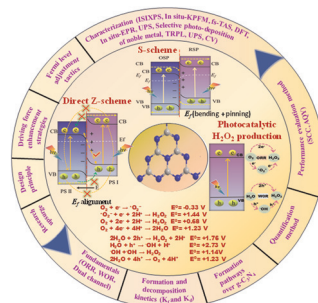


REVIEWS

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Recent advancements in graphitic carbon nitride based direct Z- and S-scheme heterostructures for photocatalytic H₂O₂ production

Subrat Kumar Sahoo, Lopamudra Acharya, Lijarani Biswal, Priyanka Priyadarshini and Kulamani Parida*



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Fundamental questions
Elemental answers

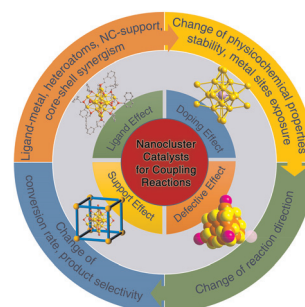


REVIEWS

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Atomically precise nanocluster-catalyzed coupling reactions

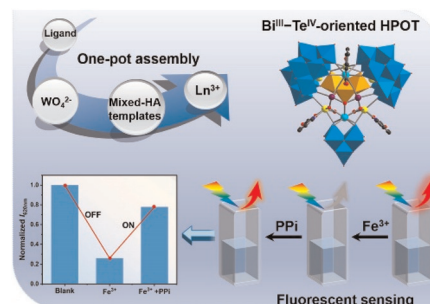
Jinhui Hu, Yi-Ming Li, Bei Zhang, Xi Kang* and Manzhou Zhu*



5004

A dual-heteroatom–lanthanide cluster-embedded polyoxotungstate for sequential fluorescence detection of Fe³⁺ and pyrophosphate

Siyu Zhang, Tiantian Gong, Chenyun Liu, Qiuyu Wang, Fuxiu Chen, Jiancai Liu,* Lijuan Chen* and Junwei Zhao*

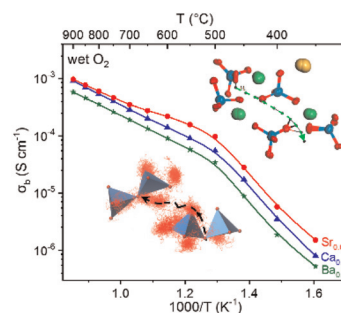


RESEARCH ARTICLES

5014

Mixed oxide ion–proton conductivity and the ionic migration mechanism in isolated tetrahedral LaVO₄ by acceptor doping

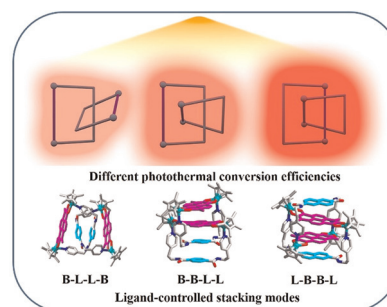
Xinyue Geng, Gaoqing Hang, Alberto J. Fernández-Carrión, Xing Ming, Sihao Deng, Lunhua He, Xiaojun Kuang and Xiaoyan Yang*



5026

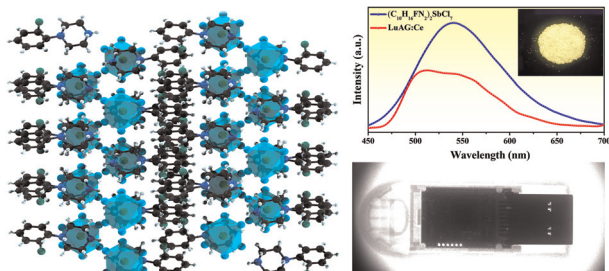
Synthesis and near-infrared photothermal conversion of Cp*Rh-based [2]-catenanes in trapezoidal metallacycles

Pan-Pan Hua, Hui-Jun Feng,* Xiang Gao, Li-Fang Zhang and Guo-Xin Jin*



RESEARCH ARTICLES

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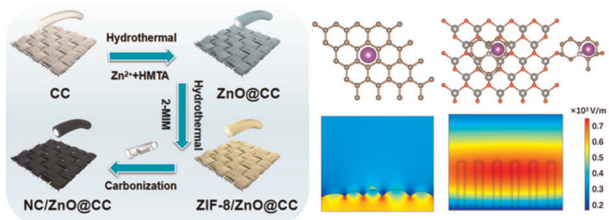


0D organic-inorganic Sb-based X-ray Scintillator

A lead-free zero-dimensional hybrid antimony halide perovskite X-ray scintillator with exceptional emission efficiency and excellent stability as a highly sensitive fluorescent probe

Yu-Yin Wang, Guo-Hao Jia, Meng-Rui Huo, Ming-Tao Cheng, Xiang-Yu Chen, Ai-Rui Chang, Jie Zhang, Yun-Yun Li and Guo-Ming Lin*

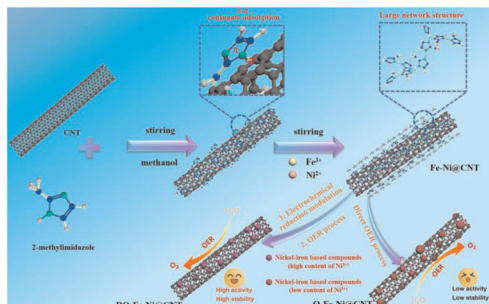
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A 3D structural NC/ZnO@carbon cloth matrix as a potassiophilic host for a dendrite-free potassium metal anode

Shuanghong Xia, Haoshan Xu, Hao Zou, Mengyao Shang, Ling Li,* Bo Ouyang* and Wenming Zhang*

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Surface *in situ* modulation of carbon nanotube-supported Fe–Ni compounds *via* electrochemical reduction to enhance the catalytic performance for the oxygen evolution reaction

Taotao Gao, Qi An, Yang Zhang, Qu Yue, Chongbo Liu, Xiaoqin Li, Bing Li, Lu Qiu,* Dan Xiao* and Qian Zhao*

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Supramolecular delivery of dinuclear ruthenium and osmium MCU inhibitors

Nicholas P. Bigam, Robyn J. Novorolsky, Keana R. Davis, Haipei Zou, Samantha N. MacMillan, Michael J. Stevenson, George S. Robertson and Justin J. Wilson*

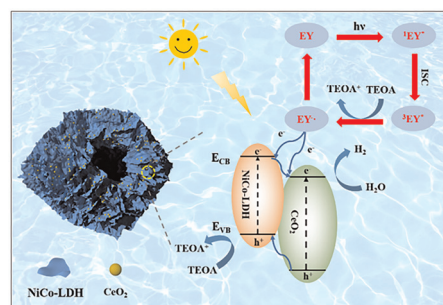


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In situ formation of CeO₂ coupled with hollow NiCo-LDH nanosheets for efficient photocatalytic hydrogen evolution

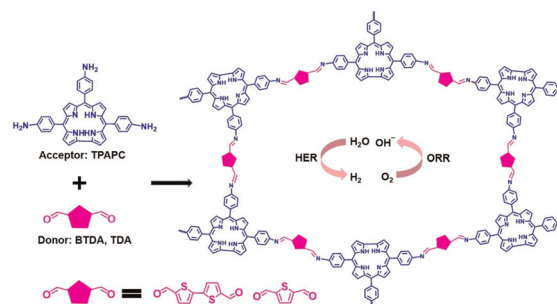
Qingyi Liu, Guoying Tan, Yu Long, Jiayu Wei, Hao Tian, Shiyu Xie and Yu Tang*



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Metal-free corrole-based donor-acceptor porous organic polymers as efficient bifunctional catalysts for hydrogen evolution and oxygen reduction reactions

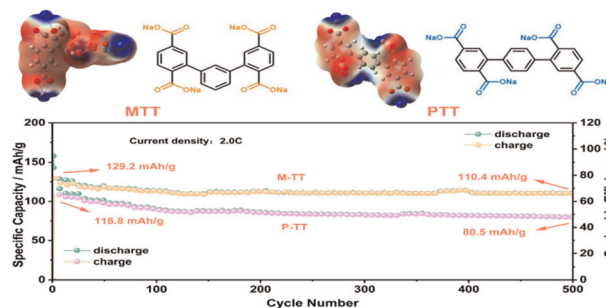
Jie Bai, Ruichen Li, Jiancheng Huang, Xuefang Shang, Ge Wang* and Shujun Chao*



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Isomers of terephthalate derivatives as anodes for sodium-ion batteries

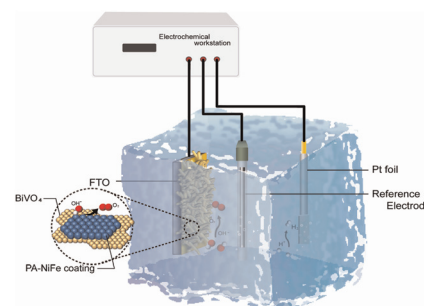
Mei Tang, Kangkang Jia,* Guandie Ma, Fei Wu, Yunjie Xiang, Qiulin Li, Qianwei Chen, Yuansheng Luo, Maowen Xu and Shu-Juan Bao*



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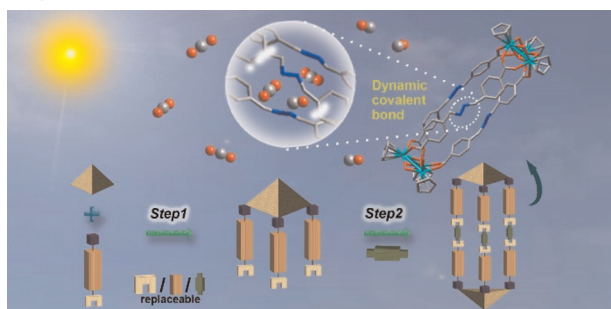
Conformal coating of superhydrophilic nickel iron phytic acid complex to boost BiVO₄ photoanode solar water oxidation

Ziqian Chen, Baoxin Ge, Jiaqi Bao, Jinhui Zhang, Chenming Yuan, Hanjian Xu, Wenbin Yang, Ziqin Qiu, Xiaoyue Yang, Xingmao Jiang, Xiang Wang, Jie Zeng, Biyi Chen* and Changwei Shi*



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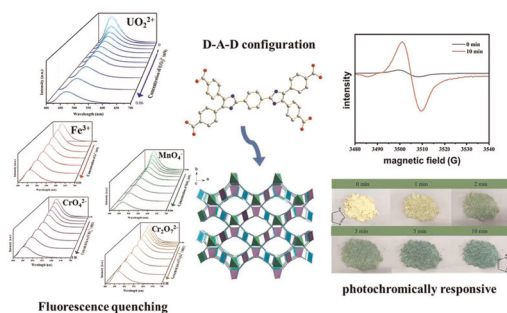
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Dynamic covalent bonding for directed construction of molecular cages toward carbon dioxide reduction

Jingting He, Man Dong, Yang Zhao, Dongxu Cui, Xiaohui Yao, Fanfei Meng, Wei Li, Shuai Yang, Chunyi Sun* and Zhongmin Su*

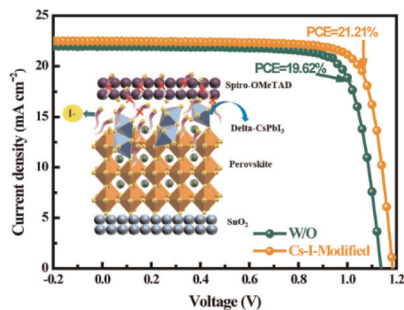
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A D–A–D-type di-ophine derivative-based photoactive metal–organic framework: fluorescence sensing of UO_2^{2+} and photochromic behavior

Yu-jian Cheng, Zi-tong Chen,* Hao-ran Ji, Yuan Chen* and Bao Li*

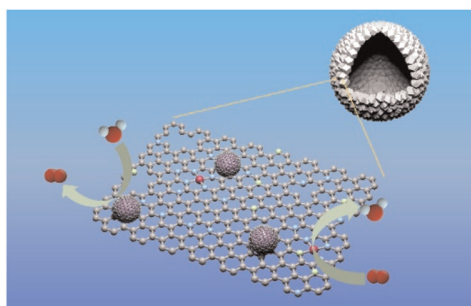
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Guarding the heterogeneous interface of perovskite solar cells by the anion-barrier synthesized using residual PbI_2

Wenqi Zeng, Zezhuan Jiang, Xiaofeng He, Limin Lai, Jiayu You, Gaobo Xu, Hongyu Bian, Cunyun Xu,* Zhongjun Dai, Sam Zhang* and Qunliang Song*

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Zeolitic imidazolite framework derived bifunctional N,P-codoped hollow carbon sphere electrocatalysts decorated with $\text{Co}_2\text{P}/\text{Fe}$ for rechargeable Zn–air batteries

Songlin Zhao, Maolin Liu, Chengcai Wang, Luhang Cai, Wei Sun* and Zhihong Zhu*

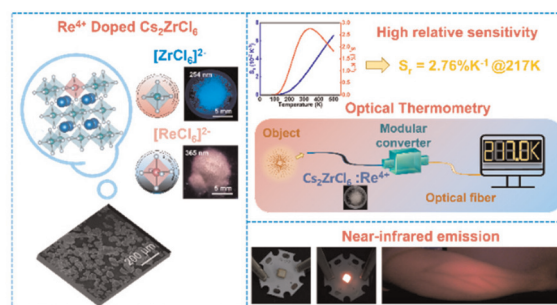


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Enhanced VIS-NIR emission of Re^{4+} doped Cs_2ZrCl_6 for optical thermometry and near-infrared illumination applications

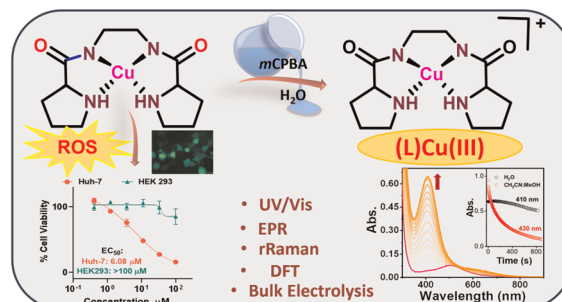
Boya Li, Zheng Huang, Peiqing Cai,* Yuxin Zhan, Xuhui Feng, Xipeng Pu, Shala Bi,* Guanghua Wang, Jie Zhang and Zegang Liu*



5172

A Cu(II) pseudopeptide complex: a surrogate to a formal Cu(III) species in water and an inhibitor of cancer cell proliferation

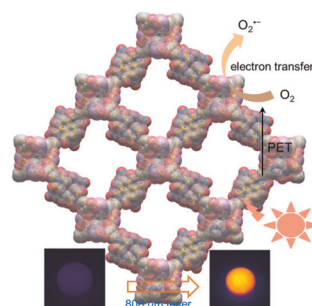
Raju Eerlapally, Sai Kumari Vechalapu, Santosh Duraisamy, Divya Lakshmi Hareendran, Jayashrita Debnath,* Dharmaraja Allimuthu* and Apparao Draksharapu*



5185

A persistent radical anion naphthalenediimide-based hybrid material for near-infrared photothermal conversion and photocatalytic oxidative organic transformations

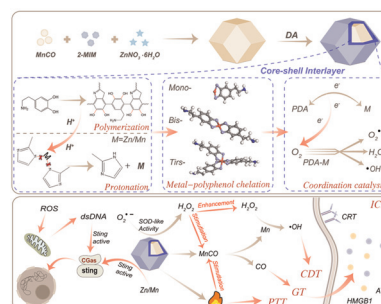
Weijun Dai, Chixian He, Sirui Li, Yuanrong Xu, Feixiang Cheng* and Jian-Jun Liu*



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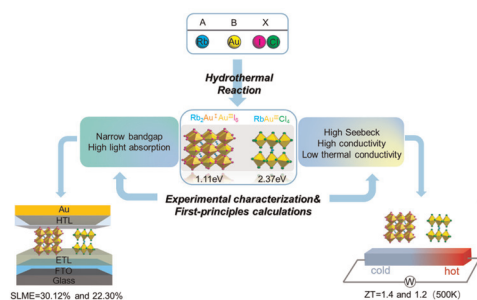
Coordination catalysis of metals and polydopamine enables controlled release of CO from MnCO by enhancing oxidative stress and the thermal effect

Wen-Xin Zhang, Lin-Yu Li, Yang Shu* and Jian-Hua Wang*



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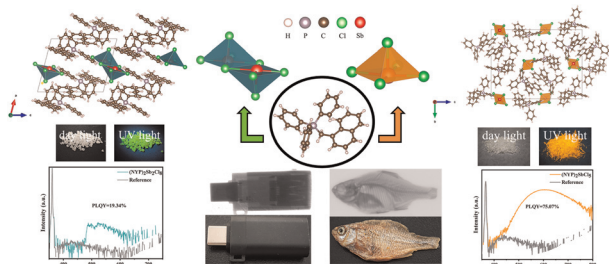
5210



Discovery of Rb-based auric–aurous halide perovskites as promising narrow bandgap semiconductors for energy conversion applications

Xuteng Yu, Chang Liu, Xifeng Fu, Zi-Ang Nan, Yuheng Li, Zilong Zhang, Qiu Xiong, Yingyao Zhang, Lingyi Meng, Shui-yang Lien and Peng Gao*

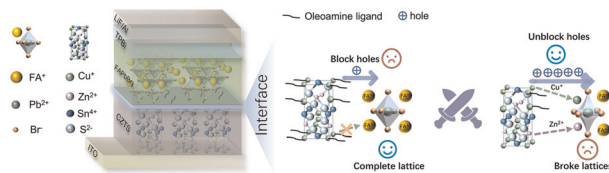
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Tunable luminescence based on structural regulation in organic antimony halides for X-ray scintillation

Sijun Cao, Yijia Wang, Jun'an Lai,* Kang An, Mengyue Wu, Peng Feng, Peng He* and Xiaosheng Tang*

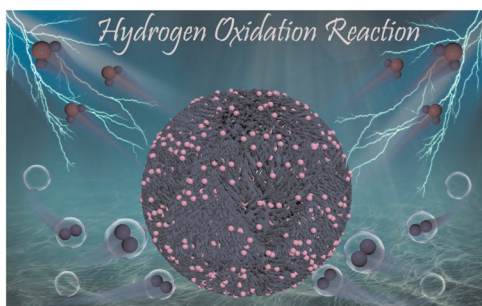
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Inorganic $\text{Cu}_2\text{ZnSnS}_4$ hole transport layer for perovskite light-emitting diodes

Lunyao Pan, Wen Li,* Xiankan Zeng, Maolin Mu, Qungui Wang, Yongjian Chen, Chenglong Li, Shiyu Yang, Linzhu Dai, Li Tao and Weiqing Yang*

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Electronic metal–support interaction via Ni defect-induced Ru-modified Ni–CeO₂ for enhanced hydrogen oxidation activity

Shuqing Zhou, Yi Liu, Lianrui Cheng, Tayirjan Taylor Isimjan,* Jianniao Tian* and Xiulin Yang*

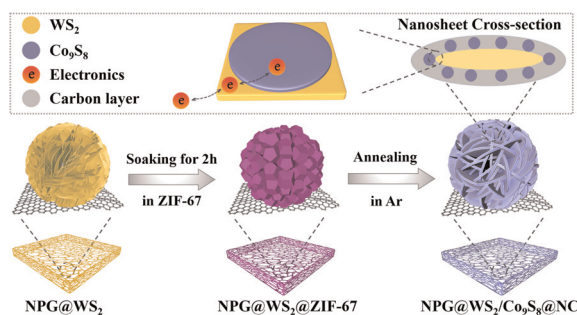


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A WS₂/Co₉S₈ heterostructure with a carbon layer anchored in nitrogen-doped graphene foam as an anode for boosting lithium storage

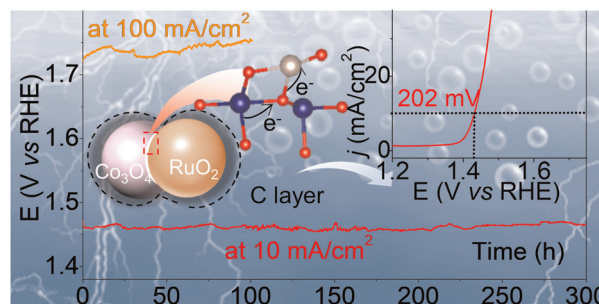
Guijie Chen, Xinyue Jiang, Chen Huang, Junye Zhang, Mingyi Wang,* Wenqi Tan, Likang Qin, Linlin Wang,* Shigang Lu and Luyang Chen*



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Hetero-nanojunction armored with carbon layer for boosting water oxidation over RuO₂ in acid

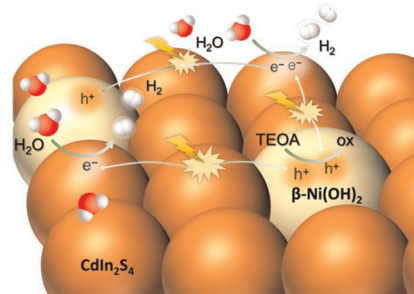
Fanfan Shang, Huijie He, Yuan Lin, Bei An, Hairui Cai, Xiaoqian Li, Weitong Wang, Chao Liang,* Shengchun Yang* and Bin Wang*



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Fabrication of high-surface-area mesoporous frameworks of β-Ni(OH)₂-CdIn₂S₄ p-n heterojunctions for improved visible light photocatalytic hydrogen production

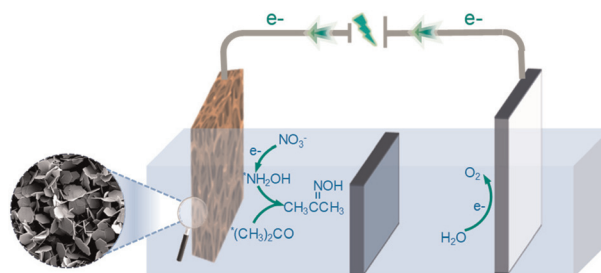
Evangelos K. Andreou, Ioannis Vamvasakis and Gerasimos S. Armatas*



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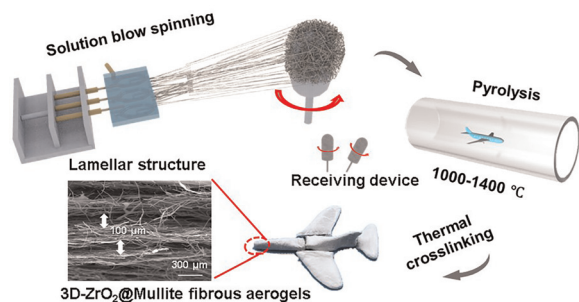
Efficient electrochemical coupling of nitrate and biomass-derived acetone to acetoxime at a high current density over a Zn/Cu hexagonal nanosheet catalyst

Jiang Shao, Yi-Fei Zhang, Sheng-Zhi Xue, Zi-Yuan Li, Xin Li, Bin Liang, Ting-Zhou Li, Hao Dong and Ya-Wen Zhang*



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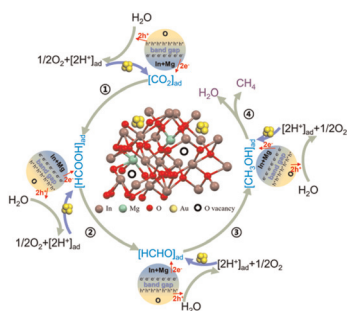
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Solution blow spinning of elastic 3D complex ZrO₂@mullite nanofibrous aerogels toward customized thermal insulation

Wenlu Zhang, Mengzhe Bao, Mengyao Chen, Wenbin Li,* Weilin Xu* and Chong He*

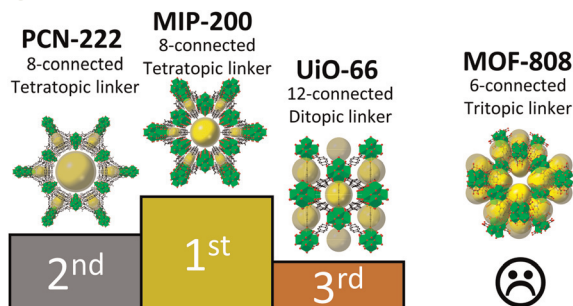
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Au depositing and Mg doping synergistically regulates an In₂O₃ photocatalyst for promoting CO₂ reduction and CH₄ exclusive generation

Yanduo Liu,* Jiadong Li,* Xianglan Dong, Lina Dai and Enqi Zhang

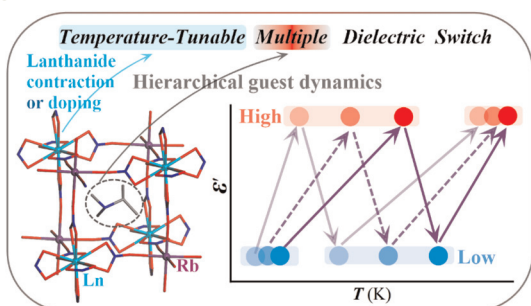
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Zirconium-based metal–organic frameworks: the relation between linker connectivity, structure stability, and catalytic activity towards organophosphates

Daniel Bůžek,* Jan Hynek, Matouš Kloda, Veronika Zlámalová, Petr Bezdička, Slavomír Adamec, Kamil Lang and Jan Demel

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Temperature-tunable multiple dielectric switch in hybrid rare-earth perovskites regulated by hierarchical guest dynamics, lanthanide contraction and doping

Hui Xiao, Lin-Yong Sheng, Shuai Chen, Rui-Kang Huang,* Cheng-Hui Zeng, Zi-Yi Du,* Chun-Ting He, Wei-Xiong Zhang* and Xiao-Ming Chen

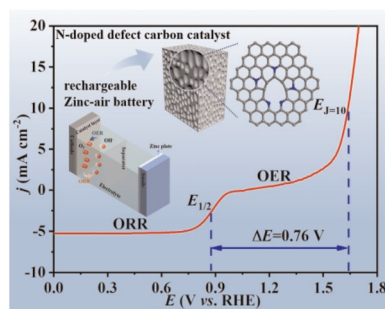


RESEARCH ARTICLES

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Hierarchical mesoporous N-doped carbon as an efficient ORR/OER bifunctional electrocatalyst for rechargeable zinc–air battery

Ping Li, Jinghong Wen, Yang Xiang, Meiqi Li, Yunxiu Zhao, Suna Wang, Jianmin Dou, Yunwu Li,* Huiyan Ma* and Liqiang Xu*



CORRECTION

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Correction: Mechanical force-driven multi-state memory in $\text{WO}_{3-\delta}$ thin films

Mingdi Yang, Zonglin Lv, Shan Li, Jiaqi Li, Jinpeng Cao, Junjie Chen, Yilin Wang, Kun Lin, Qiang Li,* Jun Miao and Xianran Xing*

