

Journal of Materials Chemistry A

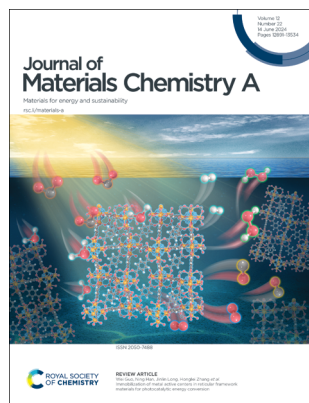
Materials for energy and sustainability

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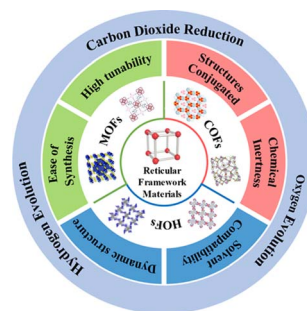
See Wei Guo, Ning Han, Jinlin Long, Honglei Zhang *et al.*, pp. 12907–12925. Image reproduced by permission of Honglei Zhang from *J. Mater. Chem. A*, 2024, **12**, 12907.

REVIEWS

12907

Immobilization of metal active centers in reticular framework materials for photocatalytic energy conversion

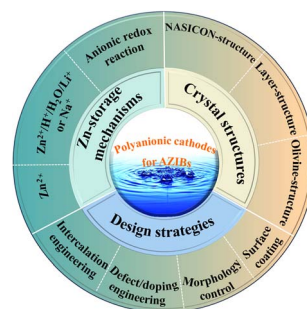
Shuo Wang, Wei Guo,* Chao Li, Bo Weng, Shuai Liu, Ning Han,* Jinlin Long* and Honglei Zhang*



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Advanced polyanionic cathode materials for aqueous zinc-ion batteries: from crystal structures, reaction mechanisms, design strategies to future perspectives

Can Jin, Qiuyu Shen, Long Zhang,* Shengwei Li, Xuanhui Qu, Lifang Jiao and Yongchang Liu*



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REVIEWS

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Soft-oxometalates (SOMs): crafting the pillars of a sustainable future

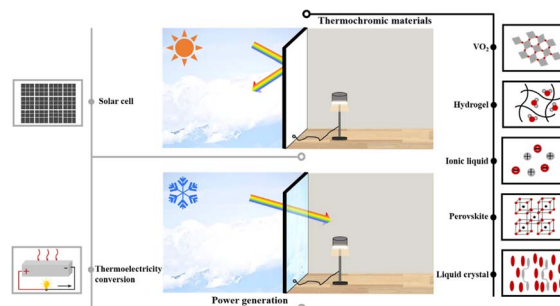
Nidhi Kumari and Soumyajit Roy*



12960

Multifunctional thermochromic smart windows for building energy saving

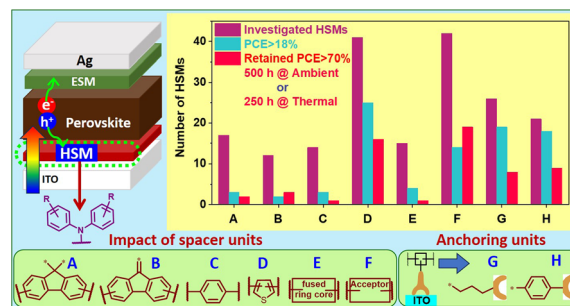
Dingkun Wang, Guoqi Chen and Jun Fu*



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Structural divergence of molecular hole selective materials for viable p-i-n perovskite photovoltaics: a comprehensive review

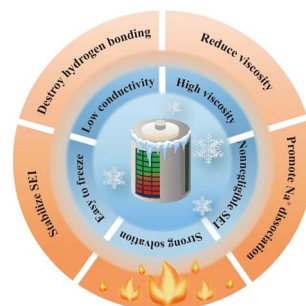
Paramaguru Ganesan, Mohammad Khaja. Nazeeruddin and Peng Gao*



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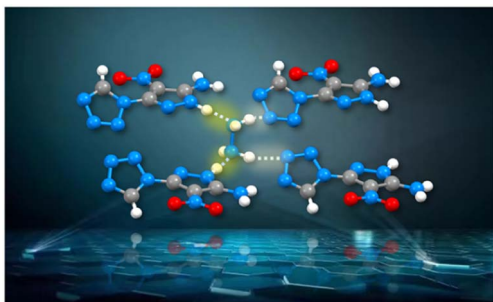
Status and strategies of electrolyte engineering for low-temperature sodium-ion batteries

Su Yang, Kaipeng Cheng* and Zhenjiang Cao*



COMMUNICATIONS

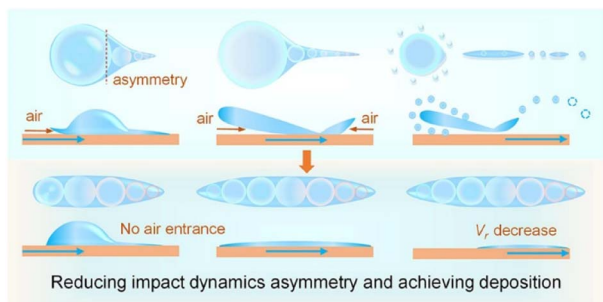
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Trapping molecular hydrazine in a cocrystal via hydrogen bonding

Mingjie Tang, Xudong Wang, Xuran Xu, Zhiwei Zeng, Chunhui Chen, Yuji Liu, Wei Huang and Yongxing Tang*

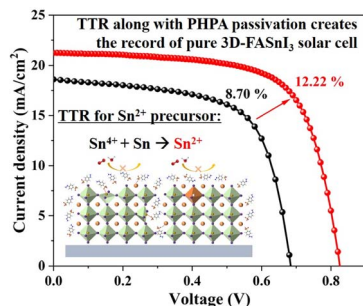
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Asymmetric deposition on high-speed moving superhydrophobic surfaces

Meng Wang, Youhua Jiang, Peng Gao, Ting Lu, Jiahua Lu, Tongfu Su, Shun Wang,* Hang Ding, Zhichao Dong* and Meirong Song*

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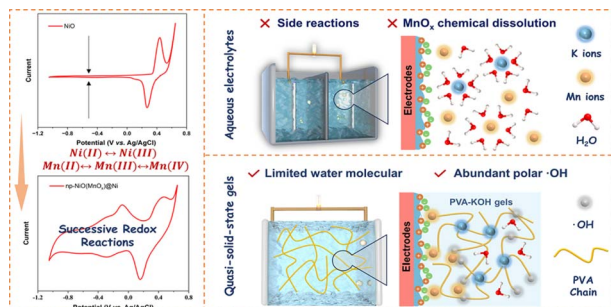


Multi-functional molecule advancing the efficiency of pure 3D FASnI₃ perovskite solar cells based on the tin tetraiodide reduction method

Hao Li, Haoyu Shi, Qin Tan, Guocong Chen, Jiafeng Wang, Guoqiang Ma, Dong He, Tianle Cheng, Han Gao, Francesco Lamberti and Zhubing He*

PAPERS

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The role of Mn in widening the potential window of solid solution derived electrodes for aqueous supercapacitors

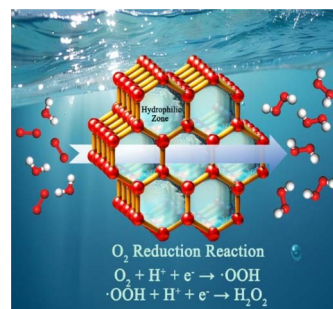
Ziying Shi, Enzuo Liu, Biao Chen, Junwei Sha, Lihua Qian, Zhijia Zhang, Xiaopeng Han, Wenbin Hu, Chunnian He, Naiqin Zhao and Jianli Kang*



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Superhydrophilic covalent organic frameworks accelerate photocatalytic production of hydrogen peroxide through proton channels

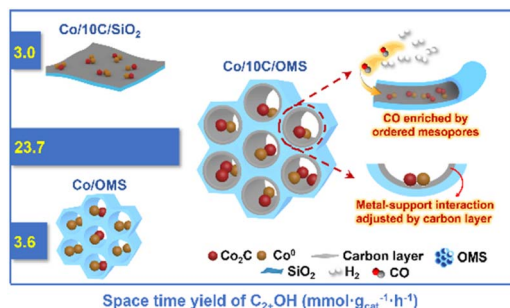
Xiaojuan Bai,* Linlong Guo, Tianqi Jia and Zhuofeng Hu*



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Co–Co₂C catalysts supported on carbon-coated ordered mesoporous silica with promoted CO insertion and C–C coupling for higher alcohol synthesis from syngas

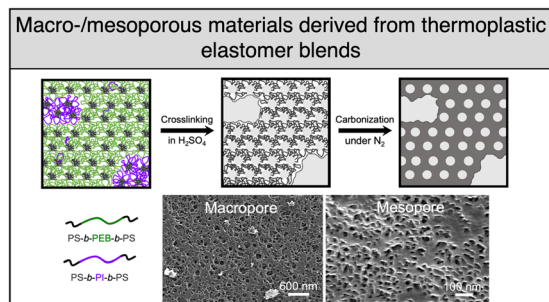
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A general strategy to prepare macro-/mesoporous materials from thermoplastic elastomer blends

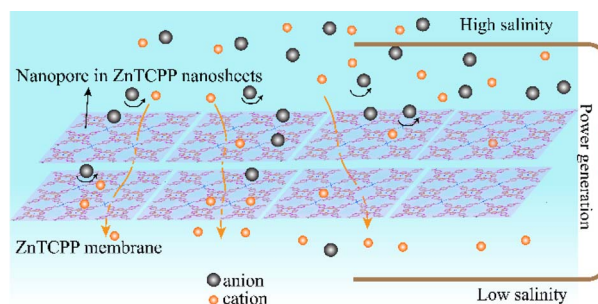
Anthony Griffin, Mark Robertson, Parker Frame, Guorong Ma, Kevin A. Green, Zhiqian Han, Sarah E. Morgan, Xiaodan Gu, Meng Wang and Zhe Qiang*



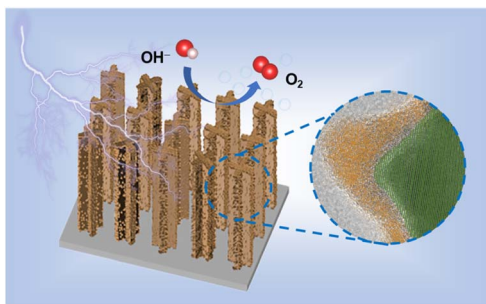
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Self-assembled two-dimensional metal–organic framework membranes as nanofluidic osmotic power generators

Yuyu Su, Jue Hou, Chen Zhao, Qi Han, Jian Hu and Huacheng Zhang*



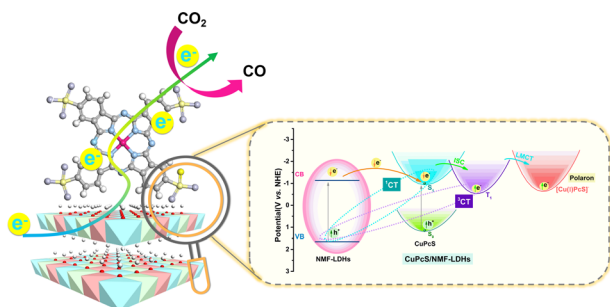
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NiFeCo–OH/NiTe nanoarrays with amorphous/crystalline interfaces for highly efficient oxygen evolution reaction

Jing Liu, Da Liu, Xiaoxiao Yan, Peifang Guo, Hongbin Xu, Peng Chen and Renbing Wu*

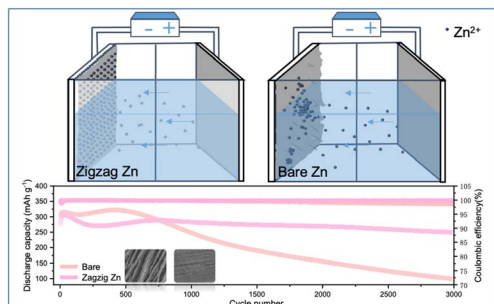
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Molecular-polaron-coupling-enhanced photocatalytic CO₂ reduction on copper phthalocyanine/NiMgFe layered double hydroxide nanocomposites

Yuexian Li, Wenli Su, Xiaoyan Wang, Jun Lu,* Wenkai Zhang* and Shuo Wei*

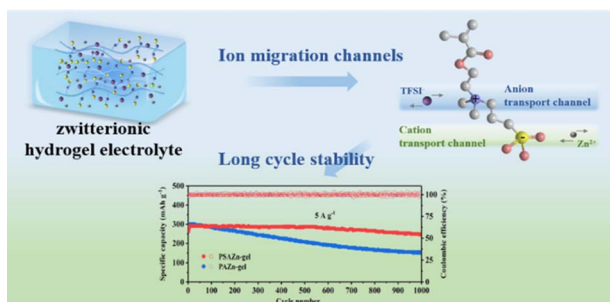
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Electric field distribution regulation of a zinc anode toward long cycle life zinc metal batteries

Xintao Long, Yizhou Liu, Dongxin Wang,* Yihang Nie, Xiaoyong Lai, Dan Luo* and Xin Wang*

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Self-adhesive polyzwitterionic hydrogel electrolytes for long-life flexible zinc-ion batteries

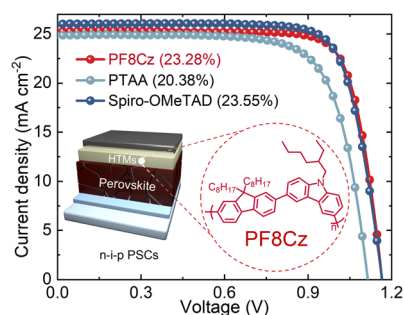
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A fluorene–carbazole conjugated polymer hole conductor for efficient and stable perovskite solar cells

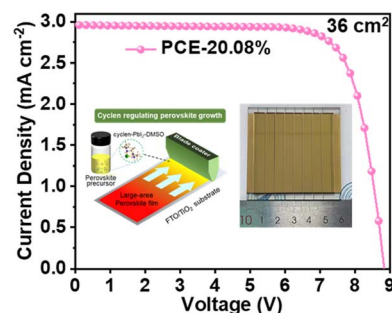
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Cyclen molecule manipulation for efficient and stable perovskite solar cells

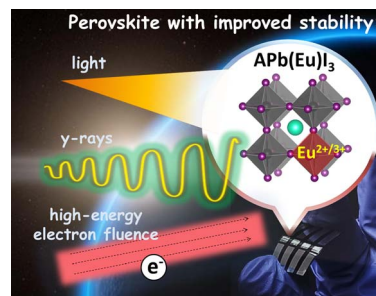
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A europium shuttle for launching perovskites to space: using Eu²⁺/Eu³⁺ redox chemistry to boost photostability and radiation hardness of complex lead halides

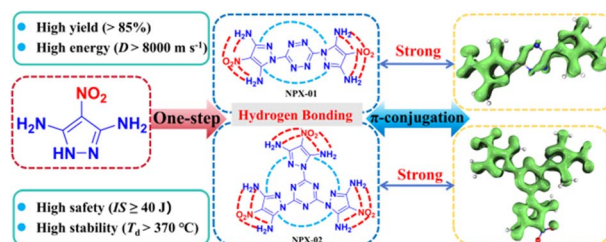
Marina I. Ustinova, Lyubov A. Frolova,* Alexandra V. Rasmetyeva, Nikita A. Emelianov, Maxim N. Sarychev, Gennadii V. Shilov, Pavel P. Kushch, Nadezhda N. Dremova, Galina A. Kichigina, Andrey I. Kukhareenko, Dmitry P. Kiryukhin, Ernst Z. Kurmaev, Ivan S. Zhidkov* and Pavel A. Troshin*



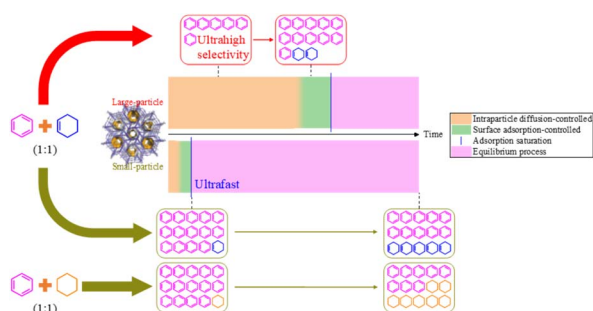
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Achieving ultra-high heat resistance of novel energetic materials through a hydrogen bonding and extended π -conjugation strategy

Xiue Jiang, Dangyue Yin, Siwei Song, Yi Wang,* Mingren Fan, Ruihui Wang and Qinghua Zhang*



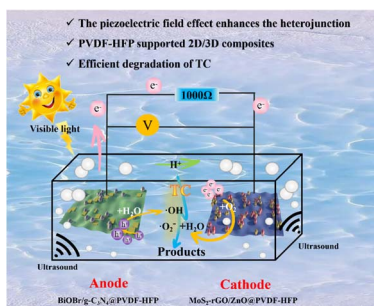
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Fast adsorption and kinetic separation of benzene and cyclohexane/cyclohexene in a microporous metal azolate framework

Ze-Hao Qiu, Jing-Hong Li, Bai-Xun He, Pei-Qin Liao, Mu-Yang Zhou, Pei-Xian Li, Rui-Biao Lin,^{*} Jie-Peng Zhang^{*} and Xiao-Ming Chen

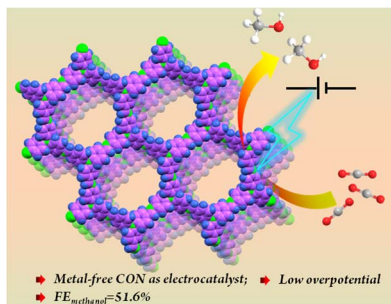
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The construction of a photocatalytic fuel cell based on piezoelectric-enhanced dual heterojunctions of PVDF–HFP supported 2D/3D composites toward photocatalytic degradation of tetracycline

Tingting Yu,^{*} Bing Yang, Ran Deng, Tao Yang and Jizhou Jiang^{*}

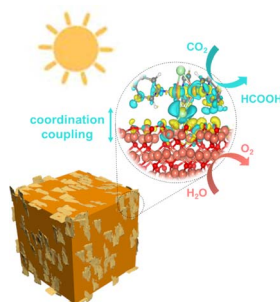
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Redox-active covalent organic nanosheets (CONs) as a metal-free electrocatalyst for selective CO₂ electro-reduction to the liquid fuel methanol

Soumitra Barman, Anupam Dey, Faruk Ahamed Rahimi, Vasudeva Rao Bakuru, Rohan Jena, Adrija Ghosh and Tapas Kumar Maji^{*}

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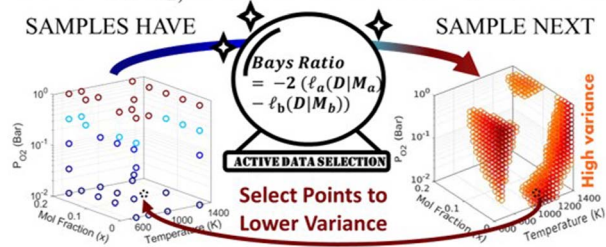


Coupling doped halogen sites in copper(I)-organic frameworks with cuprous oxide for high selectivity CO₂ photoreduction with H₂O

Jing Liang, Shengfu Huang, Yuan Chang, Andreas Terfort, Junfeng Gao^{*} and Jinxuan Liu^{*}



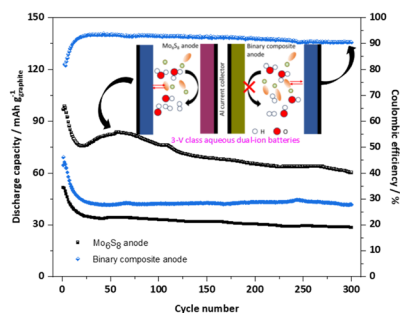
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What T, pO₂, and X should be sampled next?

A Bayesian method for selecting data points for thermodynamic modeling of off-stoichiometric metal oxides

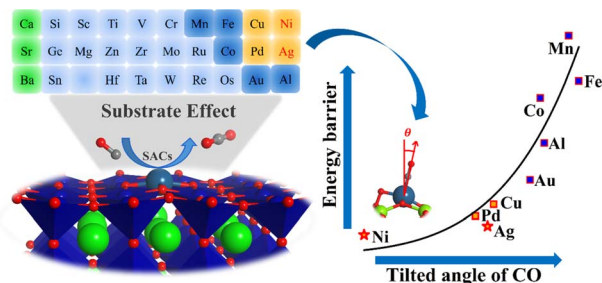
Steven A. Wilson and Christopher L. Muhich*

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Nanocomposite of Nb-based binary phase for lowering the activation energy of Li⁺ intercalation as an anode for high-performance aqueous dual-ion batteries

Dengyao Yang,* Junko Matsuda, Jun Tae Song, Motonori Watanabe and Tatsumi Ishihara*

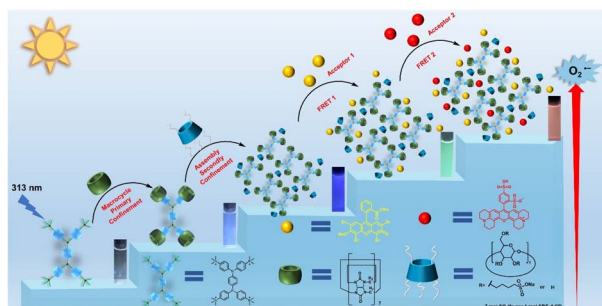
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Substrate-dependent catalytic activity of single-atom Pt for CO oxidation

Yuyao Huang, Lu Wang* and Youyong Li*

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A supramolecular cascade assembly with a two-step sequential energy transfer process for enhanced photocatalytic performance

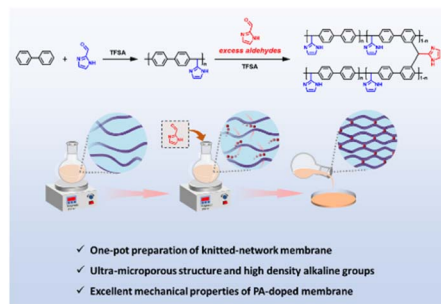
Guang-Lu Li, Kai-Kai Niu, Xuan-Zong Yang, Hui Liu, Shengsheng Yu* and Ling-Bao Xing*



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One-pot preparation of crosslinked network membranes via knitting strategy for application in high-temperature proton-exchange membrane fuel cells

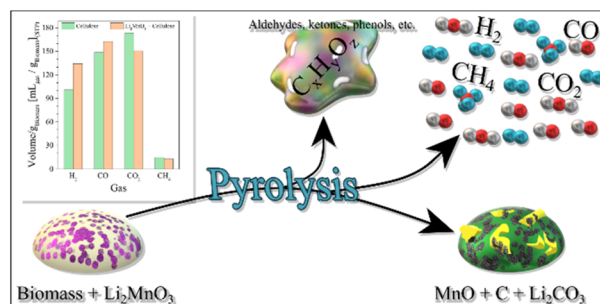
Lei Huang, Qian Wang, Zimo Wang, Xi Sun, Jiayu Guan, Jifu Zheng,* Shenghai Li and Suobo Zhang*



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Enhanced hydrogen production via assisted biomass gasification using lithium manganese as a bifunctional material

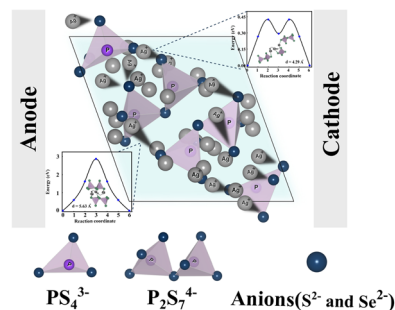
Carlos Hernández-Fontes, Nan Wang, Nayeli Gómez-Garduño and Heriberto Pfeiffer*



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A comprehensive investigation of Ag₇P₃X₁₁ (X = {O, S, and Se}) solid-state silver superionic conductors

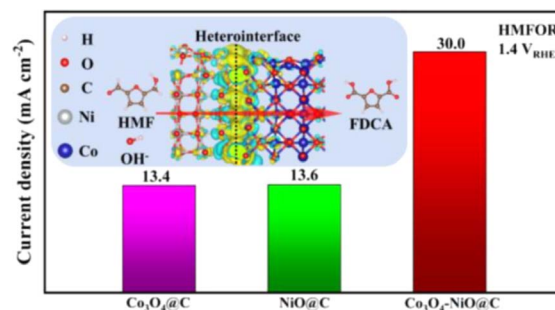
Amin Niksirat, Maryam Soleimani, Ali Lashani Zand and Mahdi Pourfath*



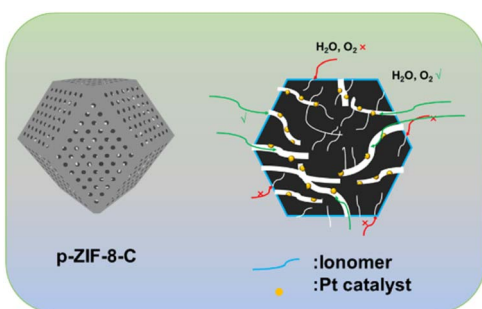
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Carbon layer confined Co–Ni bimetallic oxide heterojunctions for high-efficiency electrosynthesis of 2,5-furandicarboxylic acid

Zhong Cheng, Jing Hu, Wenjing Zhou, Wenfang Deng,* Ming Ma* and Yueming Tan*



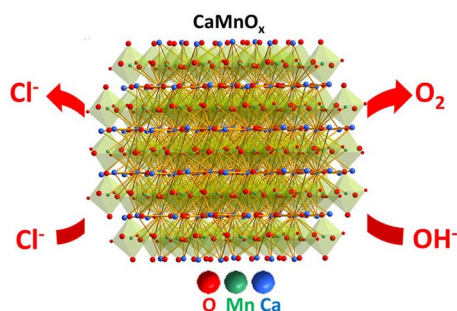
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A cooperative template strategy to control the pore structure of ZIF-derived carbon for fuel cell cathodes

Zhihong Huang, Mingjia Lu, Sucheng Liu, Longhai Zhang, Yangyang Chen, Lecheng Liang, Jiaxi Zhang, Huiyu Song, Li Du and Zhiming Cui*

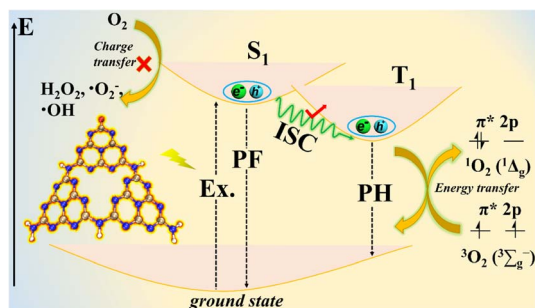
13417



Stabilizing oxygen-deficient Mn sites active in seawater oxidation

Tanveer ul Haq,* Mourad Smari, Aleena Tahir and Yousef Haik*

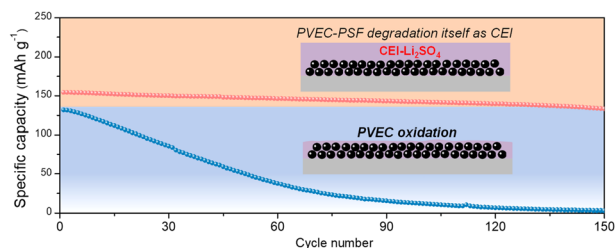
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Unveiling the mechanism on photocatalytic singlet oxygen generation over rationally designed carbonylated carbon nitride

Wei Liu, Huinan Che, Bin Liu and Yanhui Ao*

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Self-degrading functional unit introduction for anti-oxidation ability enhancement of a poly(vinyl ethylene carbonate) electrolyte

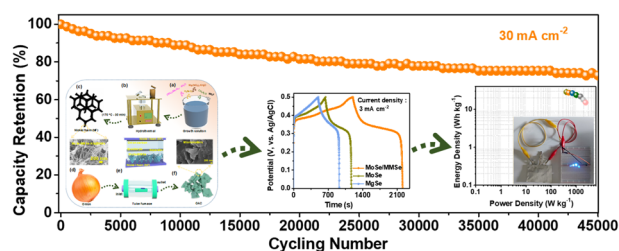
Zhiyuan Lin, Fang Chen, Xin Yin, Peipei Ding, Yonggao Xia,* Xianwei Guo* and Haijun Yu



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Binder-free MoSe/MMSe composite and onion-derived activated carbon electrode materials for high-performance hybrid supercapacitors

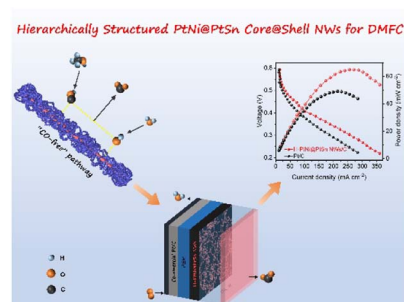
Manchi Nagaraju, Bhimanaboina Ramulu, Ampasala Surya Kiran and Jae Su Yu*



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Hierarchical platinum–nickel@platinum–tin core@shell nanowires achieve efficient fuel cell catalysis

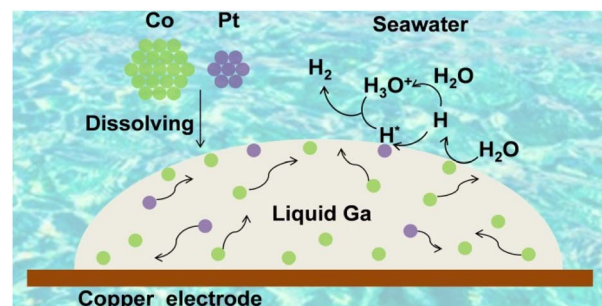
Liyuan Wang, Changhong Zhan, Wei Yan, Yunhua Li* and Lingzheng Bu*



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Dynamic dual-atom synergistic catalysis boosted by liquid metal for direct seawater electroreduction

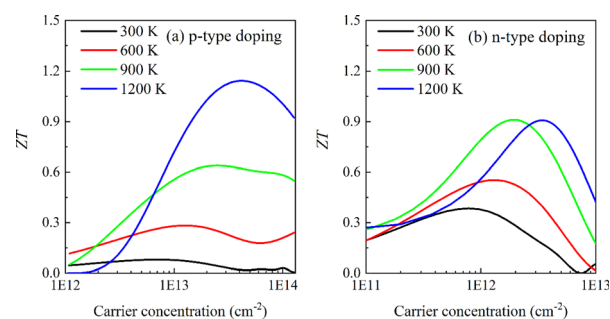
Haoxuan Li, Jinghui Wang,* Mei Cui, Renliang Huang,* Wei Qi and Rongxin Su*



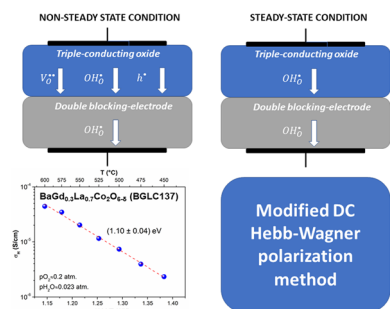
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A theoretical prediction of thermoelectrical properties for novel two-dimensional monolayer ZrSn₂N₄

Shan Feng, Hangbo Qi, Wenguang Hu, Xiaotao Zu and Haiyan Xiao*



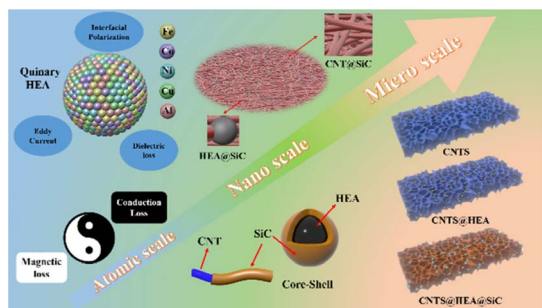
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A modified DC Hebb–Wagner polarization method for determining the partial protonic electrical conductivity in mixed-conducting $\text{BaGd}_{0.3}\text{La}_{0.7}\text{Co}_2\text{O}_{6-\delta}$

Tadeusz Miruszewski,* Ragnar Strandbakke, Kacper Dzierzgowski, Iga Szpunar, Aleksandra Mielewczyk-Gryń, Sebastian Wachowski and Maria Gazda

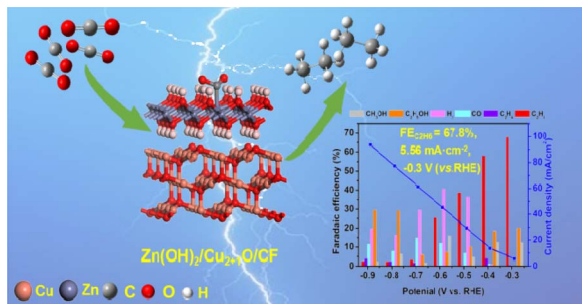
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High-entropy alloy nanoparticles combined with an SiC coating synergistically boost the electromagnetic shielding performance of a carbon nanotube sponge

Ying Zhang, Chengqing Tang, Yaoqiyu Song, Sheng Zhang, Zhi Hong Hang,* Xiaohua Zhang,* Yitan Li* and Zhaohui Yang*

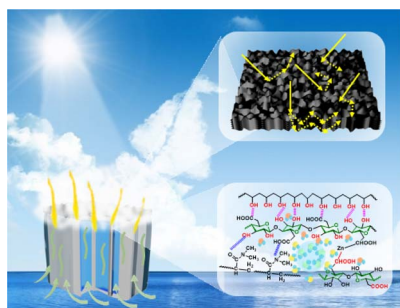
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Highly selective electrocatalytic reduction of CO_2 to ethane over a petal-like $\text{Zn}(\text{OH})_2/\text{Cu}_{2+1}\text{O}/\text{Cu}$ foam catalyst at low overpotentials

Hui-Hui Cao, Zhen-Hong He,* Yue Tian, Yue-Xia Yang, Xin Wang, Kuan Wang, Weitao Wang, Huan Wang, Jiajie Liu and Zhao-Tie Liu*

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A bioinspired hydrogel with tailored nanotopography and desired mechanical performance for highly efficient solar-driven water purification

Wenjing Ma, Wenxuan Cao, Min Cui, Qinwei Fan, Ranhua Xiong and Chaobo Huang*

