Journal of Materials Chemistry A

Materials for energy and sustainability

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IN THIS ISSUE

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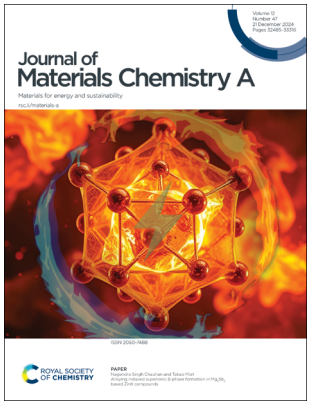

Cover
See Nagendra Singh Chauhan and Takao Mori, pp. 32703–32711. Image reproduced by permission of Takao Mori from *J. Mater. Chem. A*, 2024, **12**, 32703.

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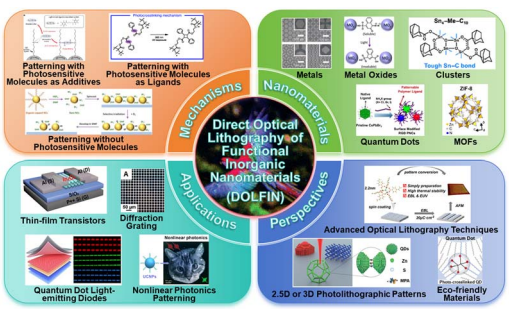
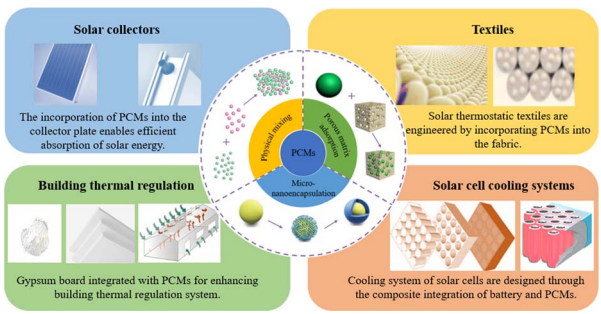
REVIEWS





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Elemental answers

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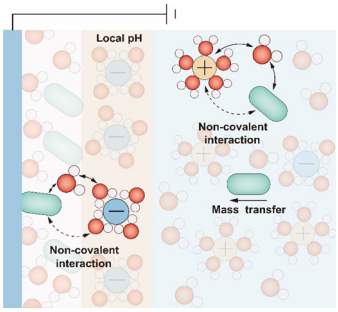

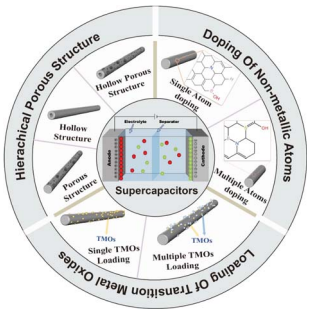

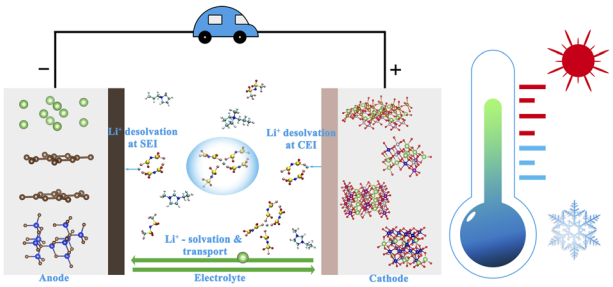

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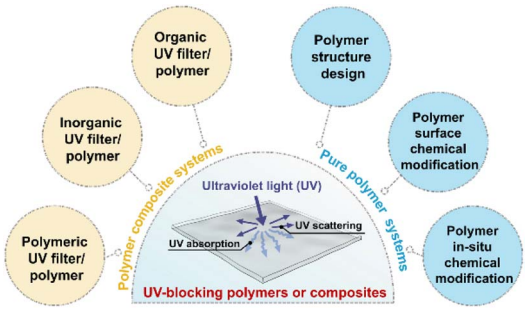
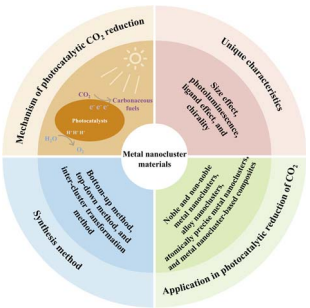


Ultraviolet-blocking polymers and composites: recent advances and future perspectives

Huan Zhang,* Xue Cheng, Cuiping Liu, Zejun Liu, Lan Liu, Can Feng, Jie Ju* and Xi Yao*



Research progress in photocatalytic reduction of CO_2 based on metal nanocluster materials

Ming-yang Liu, Rui-tang Guo,* Cong Liu, Heng-fei Cui, Hao-wen Zhu and Wei-guo Pan

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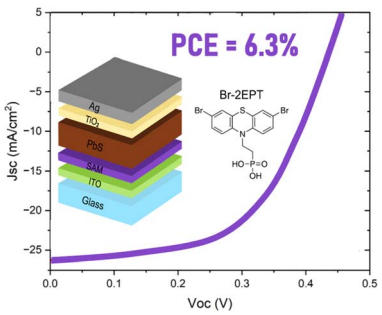
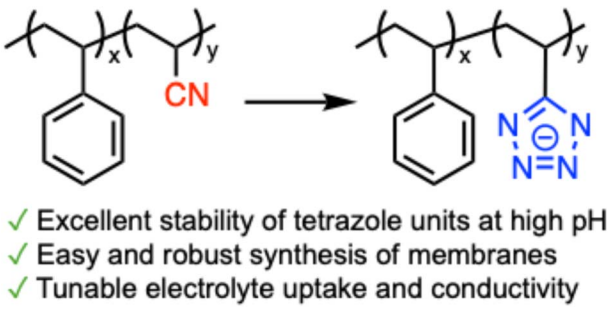


Self-assembled molecules for hole extraction in efficient inverted PbS quantum dot solar cells

Raquel Dantas Campos, Shivam Singh, Herman Heffner, Markus Löffler, Fabian Paulus and Yana Vaynzof*



Tetrazole functionalization: a new strategy toward stable alkaline ion-solvating polymer electrolytes

Dmytro Serhiichuk, Sinu C. Rajappan, Yogeshwaran Krishnan, Yifan Xia, Mikkel Rykær Kraglund, Heine Anton Hansen, Jens Oluf Jensen and David Aili*

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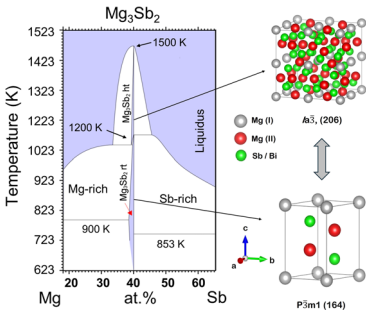

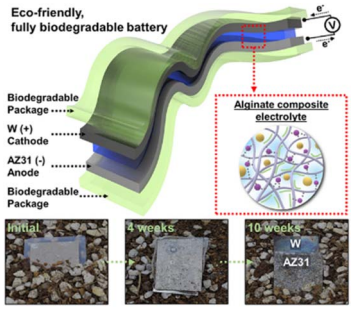

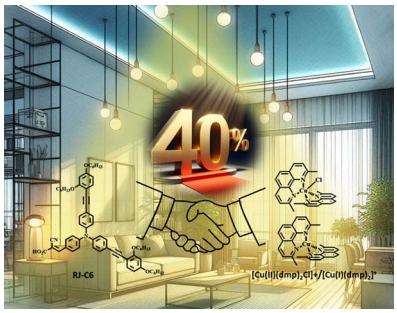

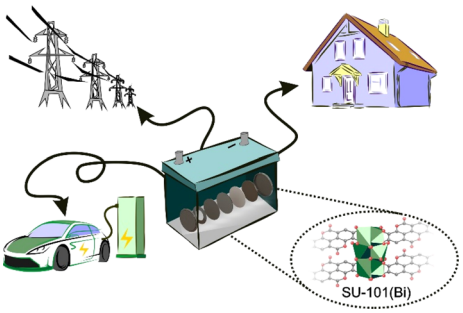

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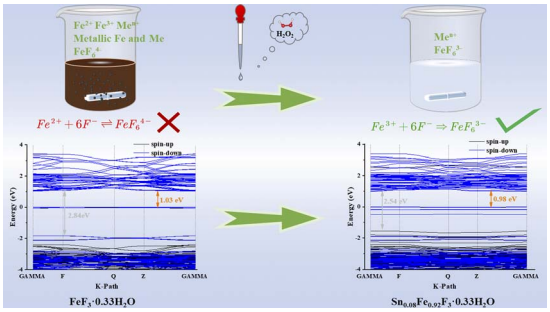

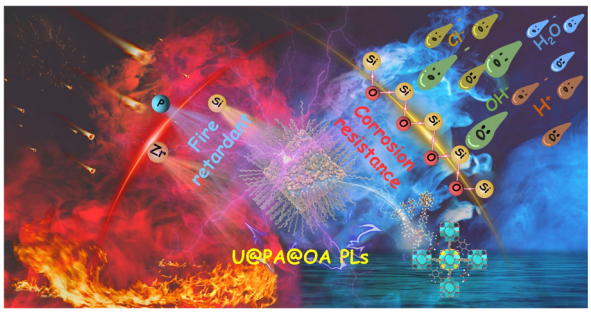

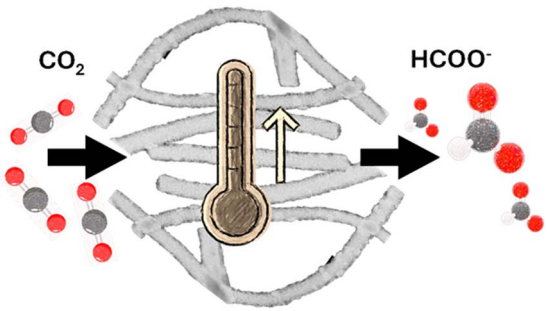

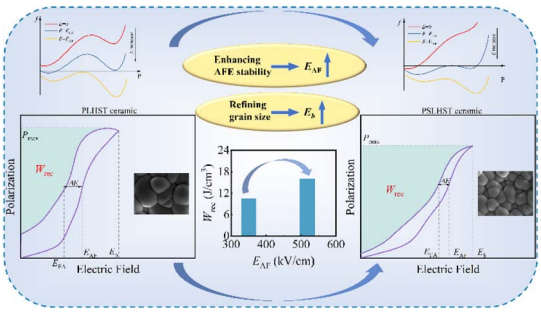

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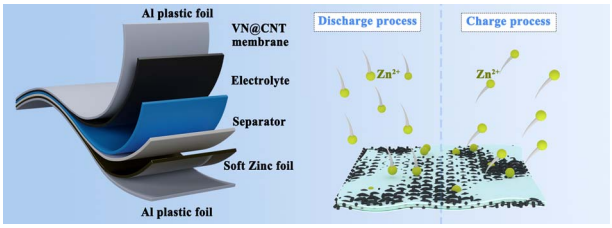
32895

Nitridation-boosted V e_g occupation of a VN@CNT flexible electrode for high-rate Zn-ion hybrid supercapacitors

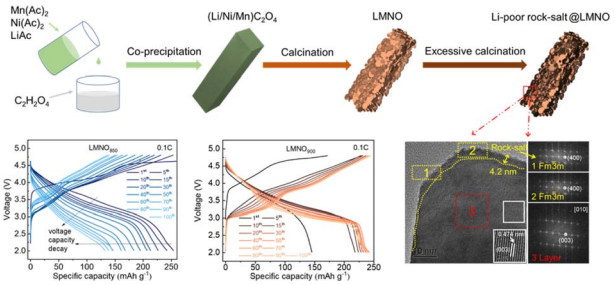
Yuyang Cao, Shiqiang Wei,* Yujian Xia, Quan Zhou, Yixiu Wang, Wenjie Xu, Changda Wang, Shuangming Chen* and Li Song



32904

Reinforcing the stability of cobalt-free lithium-rich layered oxides *via* Li-poor Ni-rich surface transformation

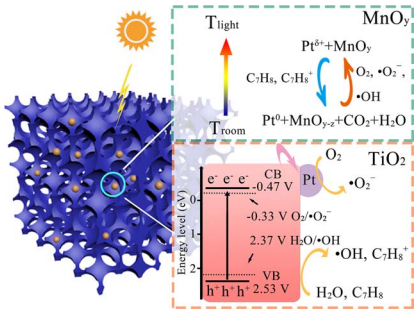
Guanjun Chen, Linwei Yu, Yihang Gan, Chunlin Zeng, Xiaolei Cheng, Linjie Xian, Linshuo Li, Qian Zhang, Chengzhi Dai, Yan Li, Ruotong Zhao, Zhilong Yang, Jinghan Qiu, Weiming Tang, Weihao Zeng, Fusheng Liu,* Jiayu Wan* and Jinlong Yang*



32913

Inverse opal structured Pt/TiO_2–MnO_y photothermocatalysts for enhanced toluene degradation activity

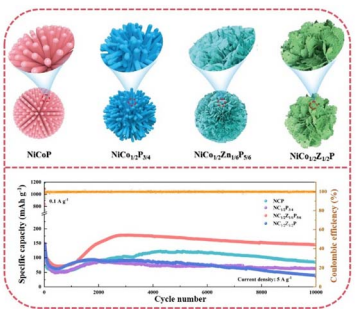
Zhili Chi, Zhiyong Liu, Wenbo Liu, Jiaqi Cai, Yiyang Zhang, Yangmei Dai, Jinlong Zhang, Ziwei Ye* and Baozhu Tian*



32925

Synergetic modulation on multiple transition metals enables $NiCo_xZn_yP_{(1+x+y)/2}$ microspheres for efficient lithium-ion storage

Wanying Zuo, Runhan Zhang, Yuxi Zou, Xiaoguang Fu, Zhibo Zhao, Bingqi Chen, Zibo Zhu, Hao Wang* and Meidan Ye*



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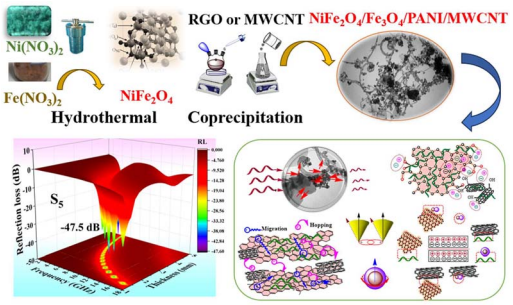

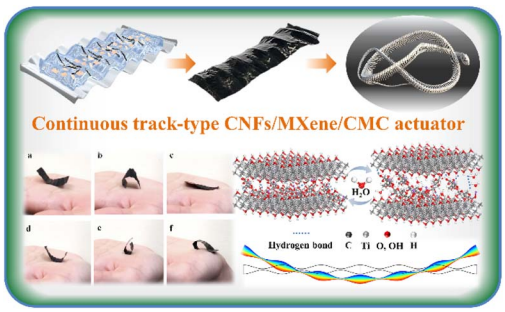

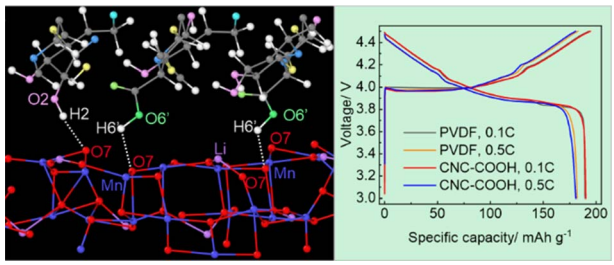

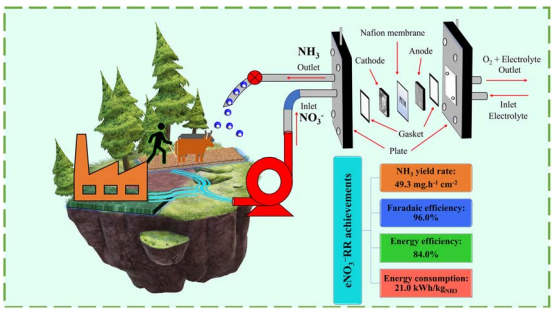

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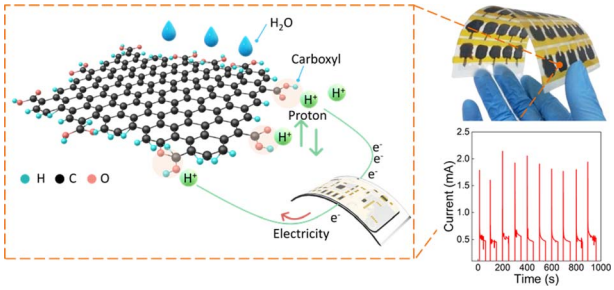

A high-current and tunable moisture-enabled electric generator for wireless wearable electronics

Yumei Li, Song Tian, Xiao Chen, Yifan Liao, Fan Jiang, Jin Ye, Yang He, Yingang Gui, Zheng Lian, Gang Liu, Jun Dai, Linhua Li, Jiang Chen, Sheng Liu, Renbo Zhu, Yuerui Lu and Mingyuan Gao*

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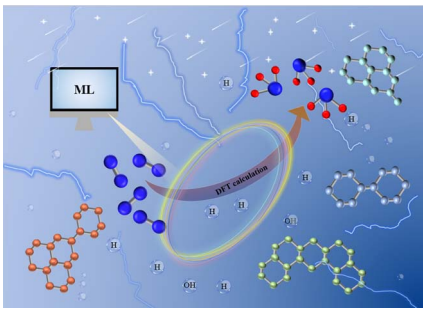

High-throughput screening of carbon nitride single-atom catalysts for nitrogen fixation based on machine learning

LinTao Xu, Yuhong Huang,* Haiping Lin, Ruhai Du, Min Wang, Fei Ma,* Xiumei Wei, Gangqiang Zhu and Jianmin Zhang

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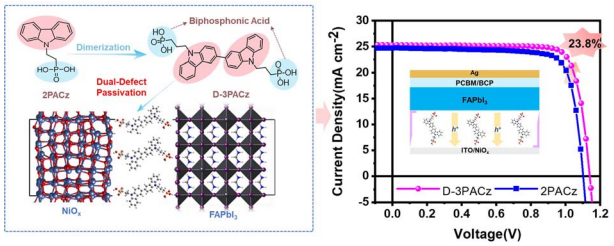

Self-assembled hole-transport material incorporating biphosphonic acid for dual-defect passivation in NiO_x-based perovskite solar cells

Ting Su, Wenjun Liu, Hao Xu, Huilong Chen, Kin Long Wong, Wanru Zhang, Qingting Su, Tongxin Wang, Shanlei Xu, Xingting Liu, Weiwei Lv, Renyong Geng,* Jun Yin* and Xin Song*

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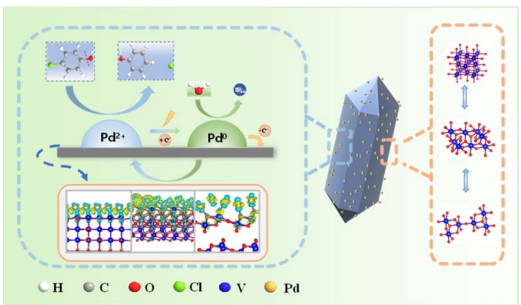

Vanadium oxide as an electron buffer to stabilize palladium for electrocatalytic hydrodechlorination

Meiqin Shi, Yifei Ren, Shuyuan Xu, Xiaofeng Xu, Fanfei Sun* and Yuanbin She*

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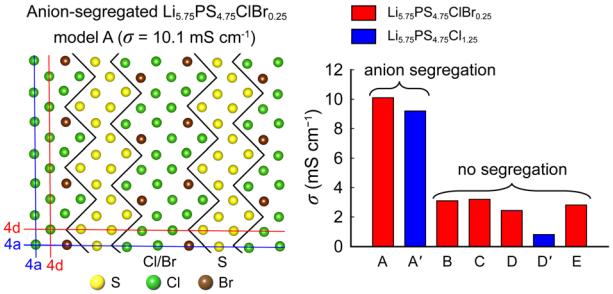
Unexpected anion segregation enabling high conductivity in argyrodite $Li_{6-x}PS_{5-x}ClBr_x$ solid electrolytes

Seho Yi, Taegon Jeon, Gyeong Ho Cha, Young-Kyu Han* and Sung Chul Jung*



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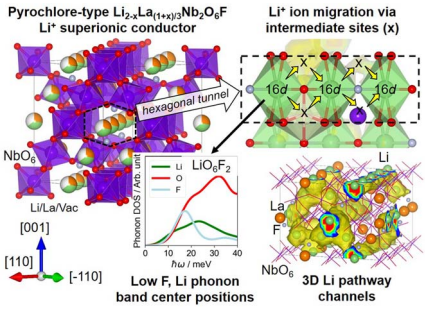
Crystal structure, stability and Li superionic conductivity of pyrochlore-type solid electrolyte $Li_{2-x}La_{(1+x)/3}Nb_2O_6F$: a first-principles calculation study

Randy Jalem,* Kazunori Takada, Hitoshi Onodera and Shuhei Yoshida



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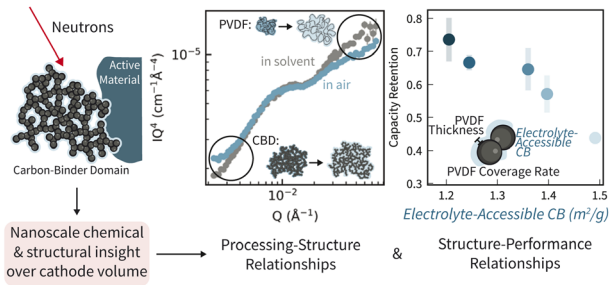
Structure–performance relationships of lithium-ion battery cathodes revealed by contrast-variation small-angle neutron scattering

Qingsong Liu, Willa Brenneis, Gergely Nagy, Mathieu Doucet, Jeffrey Lopez* and Jeffrey J. Richards*



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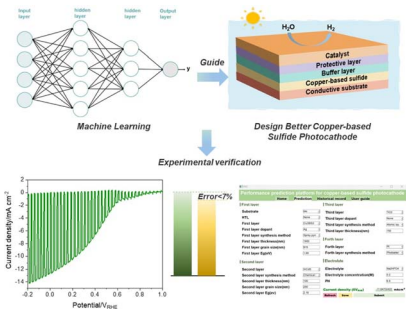
Machine learning aided design of high performance copper-based sulfide photocathodes

Yuxi Cao, Kaijie Shen, Yuanfei Li, Fumei Lan, Zeyu Guo, Kelu Zhang, Kang Wang* and Feng Jiang*



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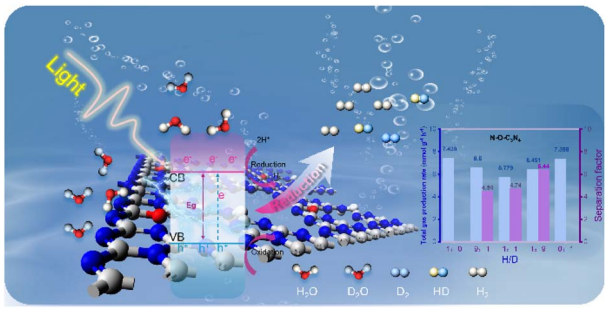

Efficient hydrogen isotope separation utilizing photocatalytic capability

Linzhen Wu, Sifan Zeng, Weiwei Wang, Shengtai Zhang, Hongbo Li* and Xiaosong Zhou*

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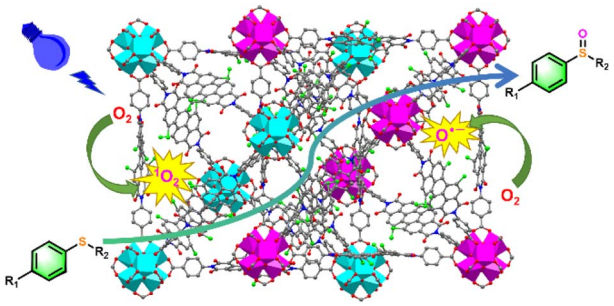
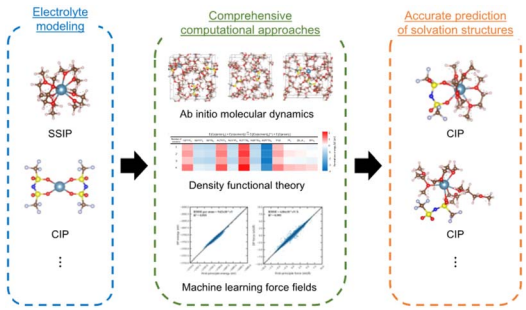


A doubly interpenetrated perylene diimide-based zirconium metal–organic framework for selective oxidation of sulfides powered by blue light

Chao Wei, Ming Lu, Jing-Jing Li, Ze-Jiu Diao, Guoliang Liu,* Xiao-Qin Liu and Lin-Bing Sun*

33150



Computational prediction of solvation structures in calcium battery electrolytes

Heonjae Jeong,* Haimeng Wang and Lei Cheng

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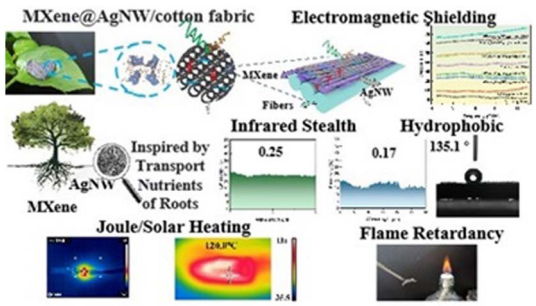

Flexible multifunctional MXene@Ag nanowires/cotton fabric inspired by transport of nutrients by roots for electromagnetic shielding, infrared stealth, Joule/solar heating and flame retardancy

Jiatong Yan, Meimei Chen, Rui Tan, Chuanxi Lin, Shan Jiang, Weijie Wang, Songyue Pan, Hongyan Xiao, Erhui Ren and Ronghui Guo*

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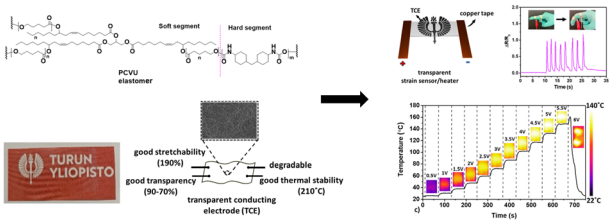
Sustainable castor oil-derived cross-linked poly(ester-urethane) elastomeric films for stretchable transparent conductive electrodes and heaters

Timo Laukkanen, Pulikanti Guruprasad Reddy,* Amit Barua, Manish Kumar, Kristofer Kolpakov, Teija Tirri and Vipul Sharma*



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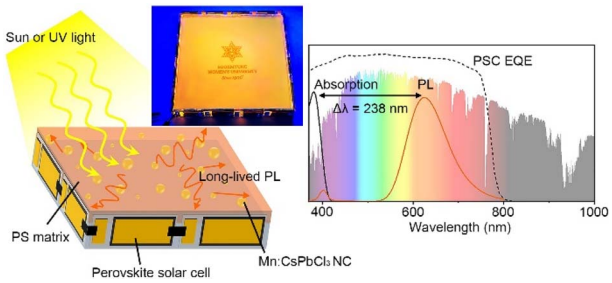
Highly transparent all-perovskite luminescent solar concentrator/photovoltaic windows

Seungju Oh, Sang Woo Bae, Tae Hyung Kim, Gumin Kang, Heesuk Jung, Young-Hoon Kim* and Minwoo Park*



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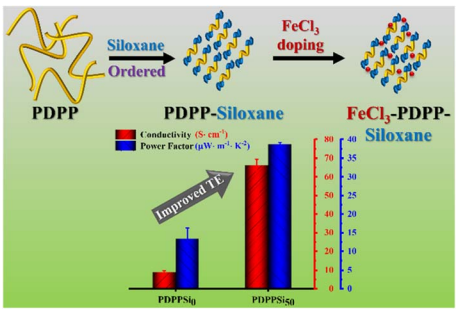
Siloxane engineered polydiketopyrrolopyrrole derivatives with improved crystallinity and doping efficiency for thermoelectric power generation

Shabab Hussain, Yufeng Wu, Zhifu Chen, Zhiyong Luo, Fei Zhong, Yu Chen,* Chunmei Gao* and Lei Wang



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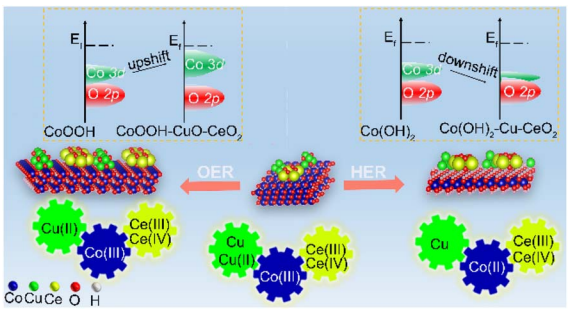
Regulating the electronic structure of catalysts *via* stable ceria and adjustable copper metal/oxide towards efficient overall water splitting

Huan Zheng, Tao Yin, Jialong Yu, Wei Xu, Weizhen Zhang, Qihui Yu, Yingnan Guo, Li Guan,* Xiaolei Huang* and Fenghe Wang*



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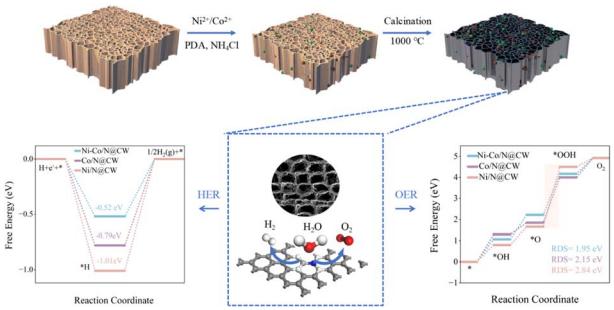

Self-supported N-doped carbon-coupled Ni–Co binary nanoparticle electrodes derived from bionic design of wood cell walls for durable overall water splitting

Congcong Yang, Ruixi Jin, Zhihang Liu, Shilei Li, Dong Lv, Jingshuo Liu, Jian Li, Zhiqun Lin* and Likun Gao*

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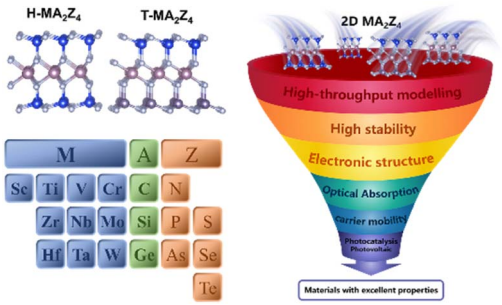

High-throughput computational screening of novel MA_2Z_4-type Janus structures with excellent photovoltaic and photocatalytic properties

Yongli Yang, Yadong Yu,* Zhe Liu,* Lijun Shang, Pan Xiang, Yu Xin, Tong Zhang, Zhonglu Guo* and Mengyan Dai*

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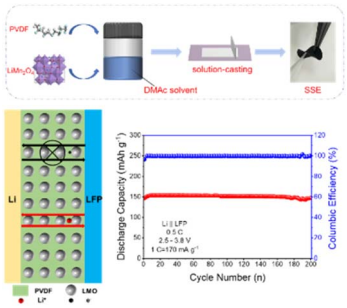

A solid-state electrolyte based on electrochemically active $LiMn_2O_4$ for lithium metal batteries

Jingzhen Du, Zhichao Chen, Bohao Peng, Zewen Sun, Wenzhuo Wu, Qi Zhou, Shuang Xia, Lili Liu,* Lijun Fu, Yuhui Chen, Tao Wang and Yuping Wu*

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Towards advanced N-rich energetic explosives: based on tetrazole and triazole groups with large conjugated systems and extensive hydrogen bonds

Guofeng Zhang, Xue Hao, Yongbin Zou, Shichang Liu, Junjie Wei, Zhen Dong* and Zhiwen Ye*

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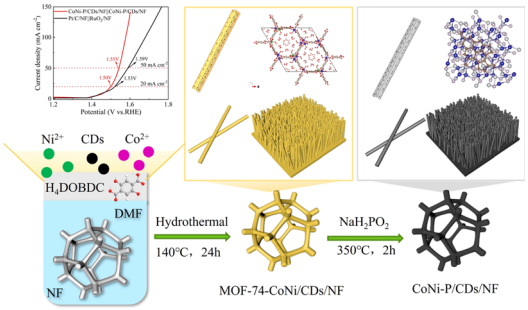
33301



Carbon dot embedded CoNi bimetallic phosphide nanorods as an efficient electrocatalyst for overall water splitting

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RETRACTION

33314

Retraction: Thermally reduced graphene oxide/polymelamine formaldehyde nanocomposite as a high specific capacitance electrochemical supercapacitor electrode

Ali A. Ensafi,* Hossein A. Alinajafi and B. Rezaei