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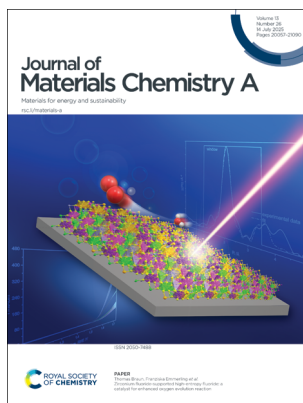
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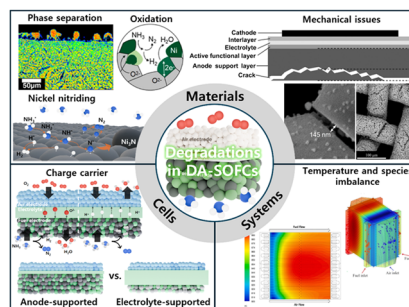
See Thomas Braun, Franziska Emmerling *et al.*, pp. 20383–20393. Image reproduced by permission of Leandro Augusto Faustino (BAM) from *J. Mater. Chem. A*, 2025, **13**, 20383.

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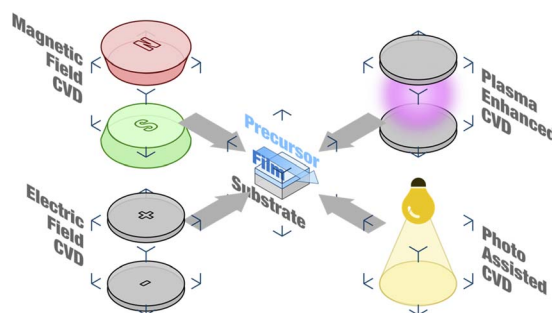
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Field-enhanced chemical vapor deposition: new perspectives for thin film growth

Bhupendra Singh, Thomas Fischer and Sanjay Mathur*



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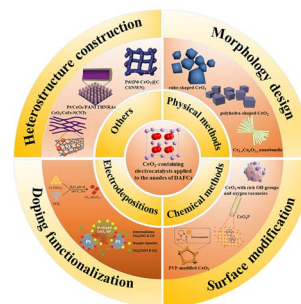


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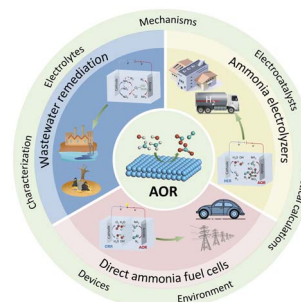
Yunqi Yu, Tong Wang, Xun Jiang, Kangcheng Chen,^{*}
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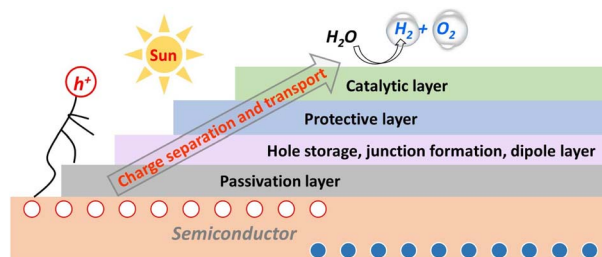
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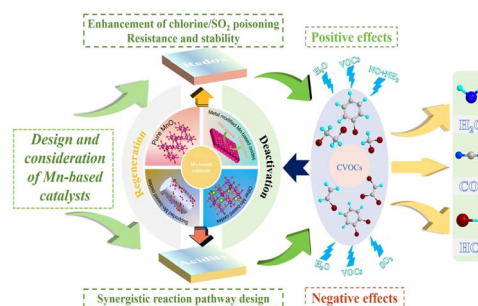
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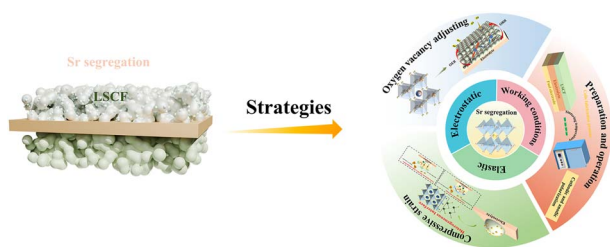
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Ying Zhang, Qi Huang, Xuan Liu,^{*} Ziang Zhang, Tao Wan,
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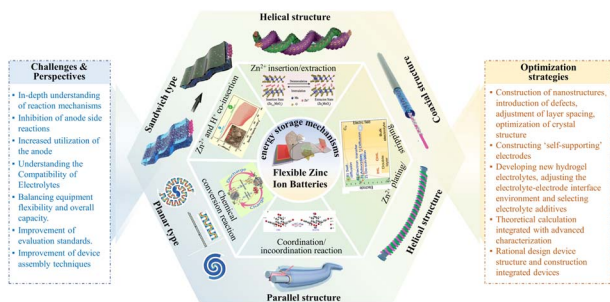
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Xinyue Dang, You Lu, Zhijian Fan, Yuying Jiang and Zhan Gao*

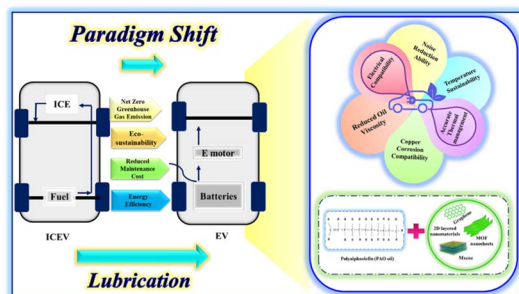
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Parasar Kumar and Srinivas Dharavath*

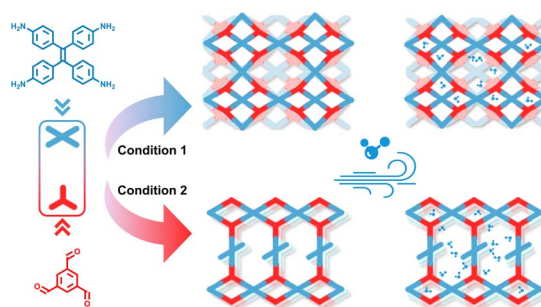


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Hierarchical sub-stoichiometric isomeric covalent organic frameworks with diverse topologies derived from the same monomers for efficient atmospheric water harvesting

Jun Chen, Pan He, Yang Li, Lijian Ma, Meicheng Zhang* and Lihong Zhou*

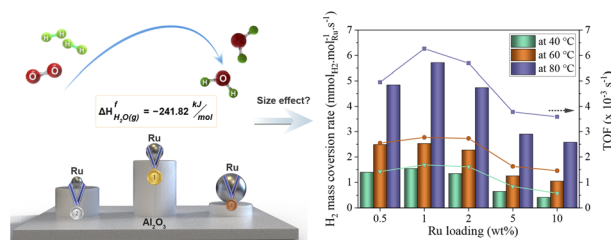


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Engineering Ru nanoparticle size and metal–support interactions for enhanced catalytic hydrogen combustion

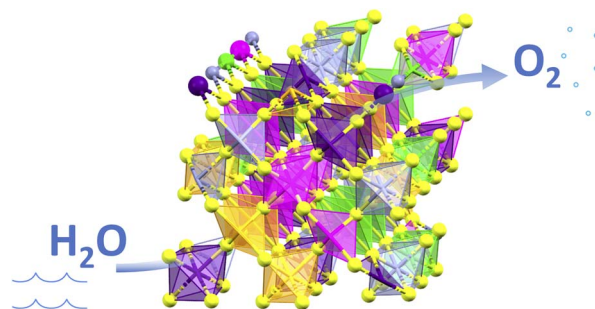
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Zirconium fluoride-supported high-entropy fluoride: a catalyst for enhanced oxygen evolution reaction

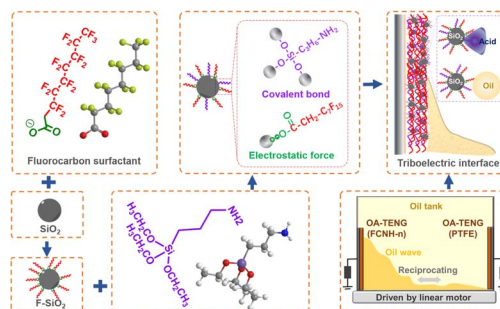
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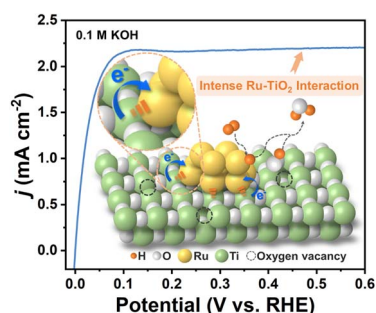
Self-powered, online, highly sensitive lubricating oil acidity monitoring driven by a triboelectric sensor

Bin Ge, Dong Liang, Yi Lei, Yajie Zhang,* Yi Liu, Wei Wu, Yijun Shi* and Jun Zhao*



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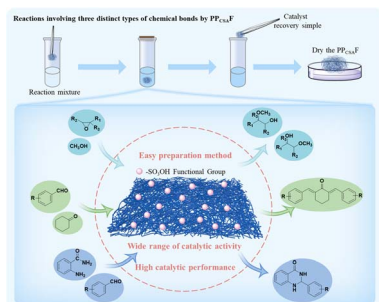
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Engineering intense Ru–TiO₂ interaction for robust hydrogen oxidation reaction

Xiao Jin, Xiaoyu Zhang,* Bei Yang, Xiaozhong Zheng, Mingxia Gao, Hongge Pan and Wenping Sun*

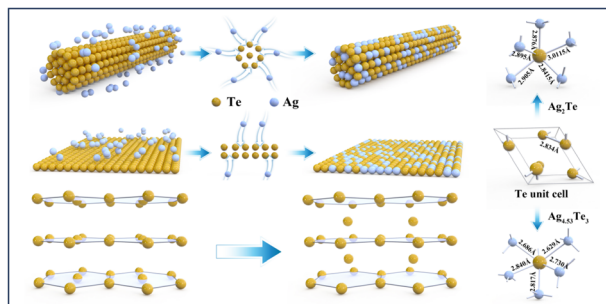
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Highly efficient and recyclable sulfonic acid-modified polypropylene fiber catalysts for epoxide ring-opening, aldol condensation and heterocyclic synthesis

Yanfei Zhang, Xiaoting Li, Jinxin Liu, Ning Ma, Minli Tao* and Wenqin Zhang*

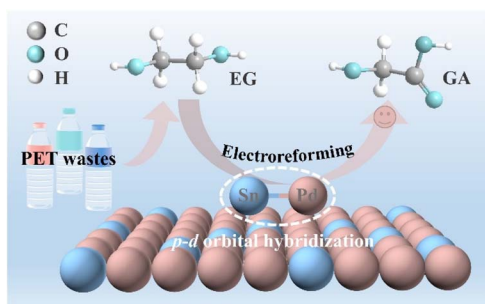
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Ziqiang Wang, Yanan Wang, Jiayao Chen, Hongjie Yu, You Xu, Kai Deng,* Hongjing Wang* and Liang Wang*

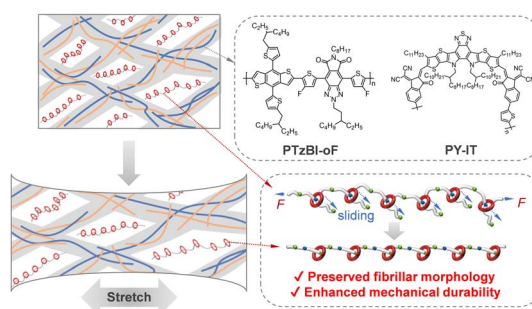


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Efficient and robust intrinsically stretchable organic solar cells via mechanically interlocked oligomer integration

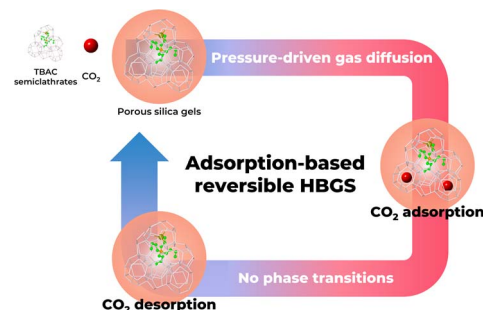
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Reversible CO₂ adsorption in preformed solid semicrathrates within porous silica gels

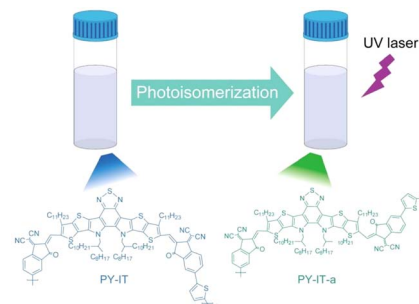
Sungwoo Kim, Junghoon Mok, Gyeol Ko and Yongwon Seo*



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Photon-induced isomerization enables high-performance polymer solar cells

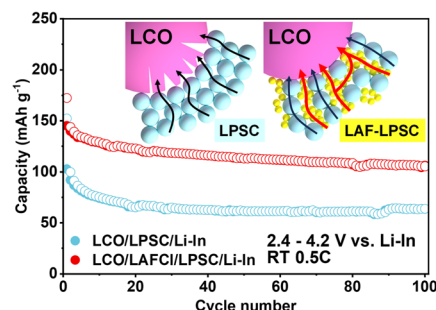
Hanzhi Wu, Jiawei Qiao, Jinqun Xu, Mingxu Zhou, Zhen Fu, Peng Lu, Hang Yin, Xiaoyan Du, Wei Qin, Kangning Zhang* and Xiaotao Hao*



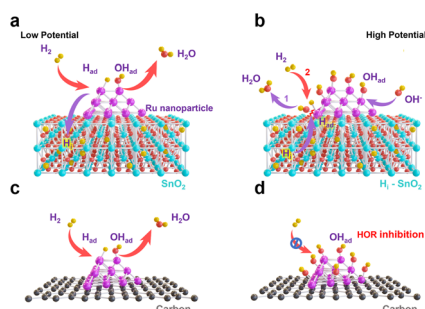
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A fluoride-incorporated composite electrolyte enabling high-voltage all-solid-state sulfide-based lithium batteries

Ziyu Lu, Siwu Li,* Lin Li, Liang Ming, Ziling Jiang, Miao Deng, Zhenyu Wang,* Chen Liu and Chuang Yu*



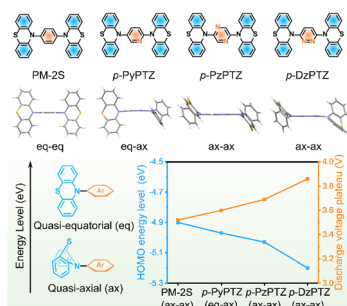
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Hydrogen stored in Ru/SnO₂ induce alkaline hydrogen oxidation reactions in a wide potential range

Jiahe Yang, Peichen Wang, Pin Meng, Hongda Shi, Zhiyu Cheng, Yang Yang, Yunlong Zhang, Xingyan Chen, Xi Lin, Dingge Fan, Siyan Chen, Dongdong Wang and Qianwang Chen*

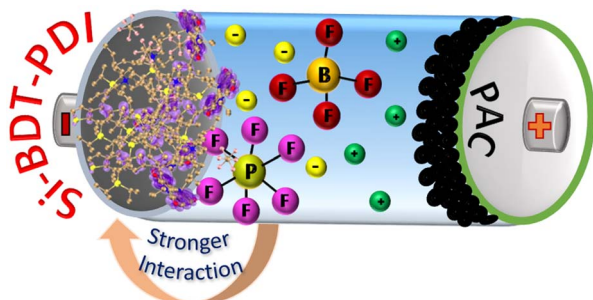
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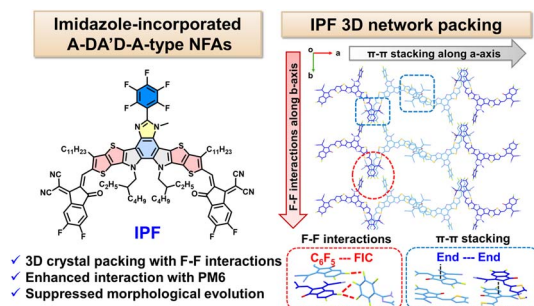
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Energy storage behavior of side chain-engineered Si-bridged redox-active donor–acceptor conjugated polymers operated in organic electrolytes

Subir K. Pati, Sunita Muduli, Dhananjaya Patra,* Shinbee Oh, Bumjoon J. Kim, Sabyashachi Mishra* and Sungjune Park*

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A C₆F₅-functionalized benzimidazole acceptor enabling supramolecular fluorinated interactions for enhanced photovoltaic performance and thermal stability

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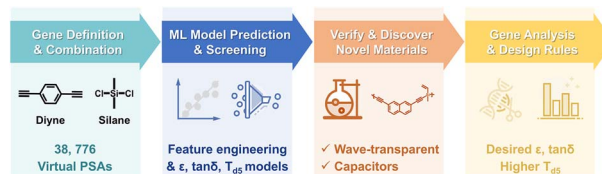


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On-demand design of materials with enhanced dielectric properties via a machine learning-assisted materials genome approach

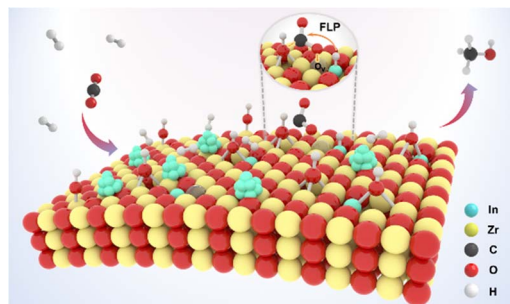
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Hydroxyl-oxygen vacancy synergy over $\text{In}_2\text{O}_3\text{--ZrO}_2$ catalysts: mechanistic insights into CO_2 hydrogenation to methanol

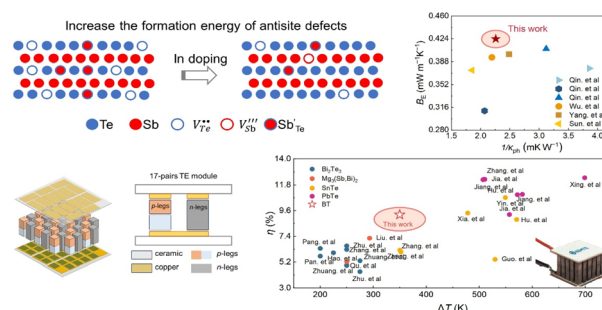
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Constructing multiple microstructures in Sb_2Te_3 -based thermoelectrics enables a high-performance segmented power generator

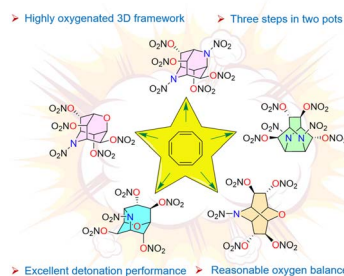
Min Wang, Qiang Zhang,* Yue Wu, Ruyuan Li, Qiaoyan Pan, Jingtao Xu, Dongxiang Lv, Xiaojian Tan,* Guo-Qiang Liu and Jun Jiang*



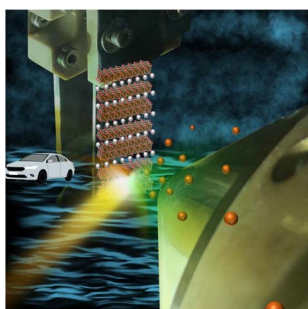
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An efficient synthetic method for cage-like energetic frameworks with high energy density and appropriate oxygen balance

Yunzhi Liu, Jinyuan Wang, Zhenxin Yi, Qi Zhou, Tianjiao Hou, Guixiang Wang, Yu Zhang* and Jun Luo*



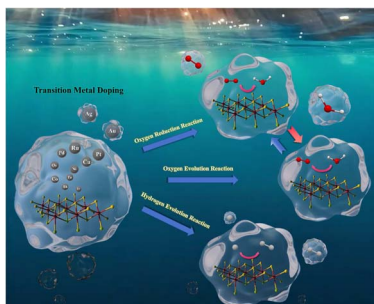
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Operando APXPS for direct probing of Li ion battery LCO electrode/electrolyte interface chemistry during lithiation/delithiation

Qianhui Liu, Tove Ericson, Robert Temperton, Ida Källquist, Fredrik Lindgren, Laura King, Alenka Križan, Katie L. Browning, Ethan J. Crumlin, Gabriel M. Veith and Maria Hahlin*

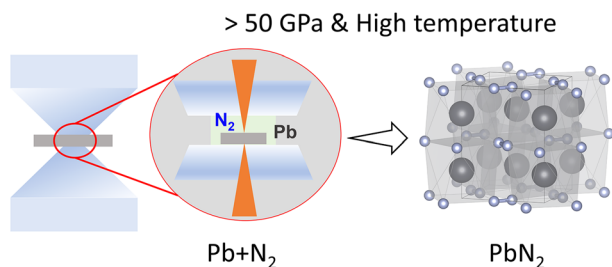
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Theoretical screening of transition metal atoms supported on two-dimensional Janus VS₂ for HER/OER/ORR single-atom catalysts

Zhengrui Li, Xinran Li,* Feiyu Jia, Libo Wang and Ping Li*

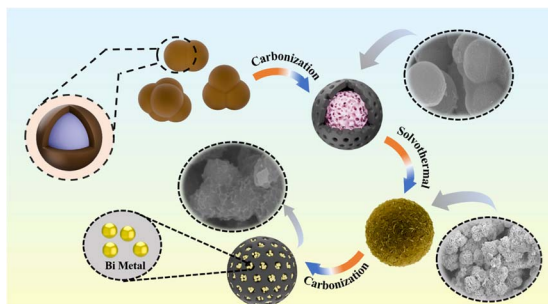
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High-pressure synthesis of PbN₂, the missing group 14 AN₂-type compound

Ken Niwa,* Hirokazu Ogasawara, Takuya Sasaki, Shunsuke Nomura, Gendai Azuma, Sylvain Pitié, Gilles Frapper and Masashi Hasegawa

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Synergistic sodium storage in bismuth-loaded polycellular carbon spheres: high diffusion kinetics and stability

Jinhua Zhang, Yongfeng Li,* Yanzhen Liu, Yu Cui, Xiangru Zhu, Xiaowen Zhang and Chunli Guo*

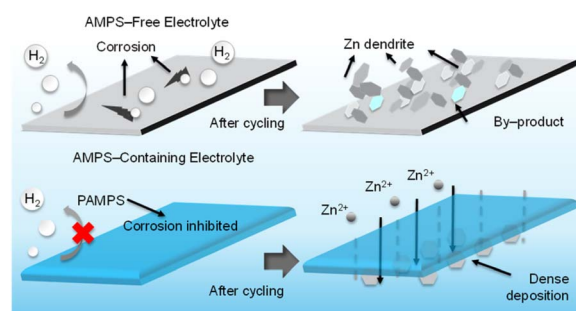


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An *in situ* polymerized electrolyte layer via frustrated Lewis pairs enables aqueous Zn metal batteries with an ultrahigh accumulated capacity of 12 A h cm^{-2}

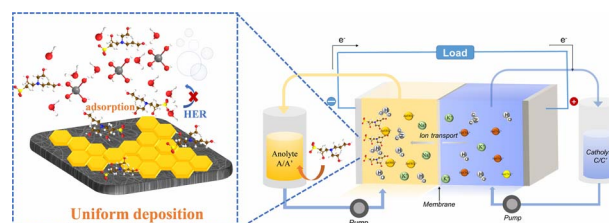
Yutong Xia, Gege Wang, Jing Wu, Xiaowei Chi* and Yu Liu*



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Interfacial adsorption-enabled trace additives for stable zinc-based flow batteries

Ziyi Huang, Xi Chen, Zhaoxia Hou, Yunxuan Li, Xinyue Liu, Jianyang Wu, Mingyue Zhou* and Wen Liu*



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The synergistic mechanism of an FeS_2/ACFs self-standing membrane in highly efficient electro-Fenton antibiotic degradation: carbon nanodefects and free radical analysis

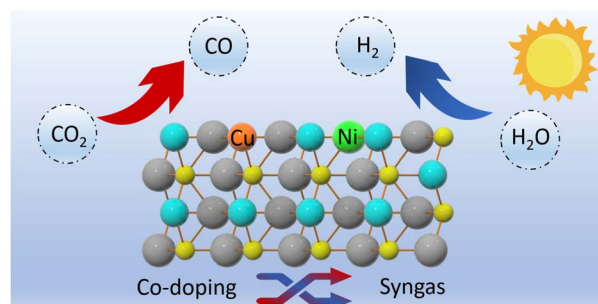
Huiying Zhang, Shuyan Yu,* Shunzheng Zhao and Congju Li*



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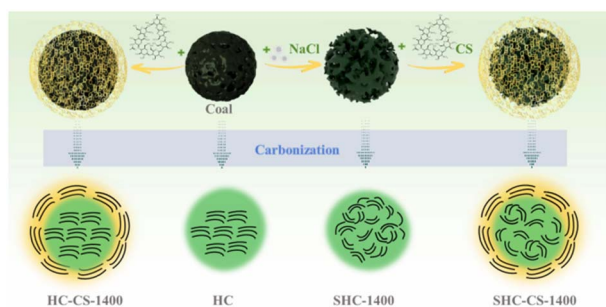
$\text{Zn}_{0.5}\text{Cd}_{0.5}\text{S}$ photocatalysts with loaded Cu^{2+} and Ni^{2+} dual active sites for promoted syngas production

Wuqing Luo, Yuhao Yi, Lian Duan, Ruiling Du, Gen Chen, Min Liu, Xiaohe Liu, Renzhi Ma and Ning Zhang*



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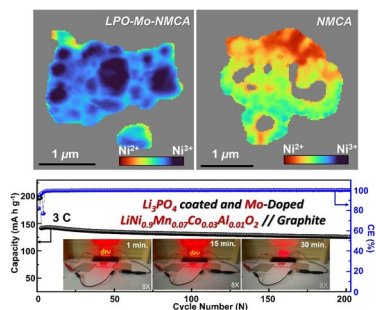
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Achieving high-capacity sodium insertion of coal-based hard carbon anodes *via* closed-pore modification

Xinyue Chen, Penggao Liu,* Ting Wang, Chunrong He, Wei Song, Jinjin Ban, Shasha Gao and Kaiyu Liu

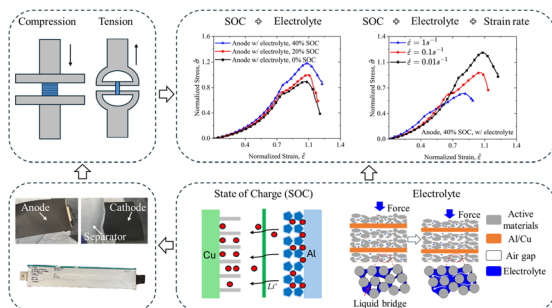
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Dual-phase modulation *via* Mo doping and Li_3PO_4 coating for stabilized $\text{LiNi}_{0.9}\text{Mn}_{0.07}\text{Co}_{0.02}\text{Al}_{0.01}\text{O}_2$ cathodes in high-energy lithium-ion batteries

Srinivasan Alagar, Jun Kim, Eun-Jung Shin, Alex Ditter, David A. Shapiro, Namdong Kim, Won Gi Hong, Hyungsub Kim,* Young-Sang Yu,* Gi Dae Park* and Sang Mun Jeong*

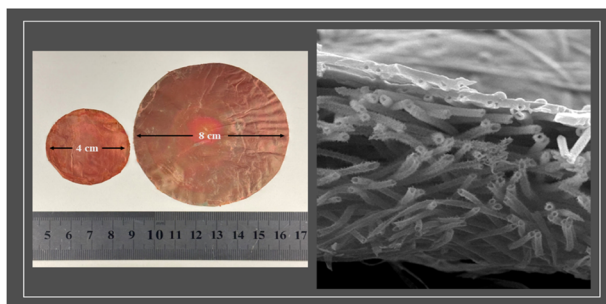
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Effects of electrolyte, state of charge, and strain rate on the mechanical properties of lithium-ion battery electrodes and separators

Shuguo Sun, Bo Rui, Xijun Tan, Saurabh Bahuguna, Jun Zhou and Jun Xu*

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Liquid-liquid-solid interfacial polymerization approach to rapid fabrication of large-sized, self-standing structured COF membranes

Chenhui Ding, Yingying Du, Tamara Fischer, Jana Timm, Roland Marschall, Jürgen Senker and Seema Agarwal*

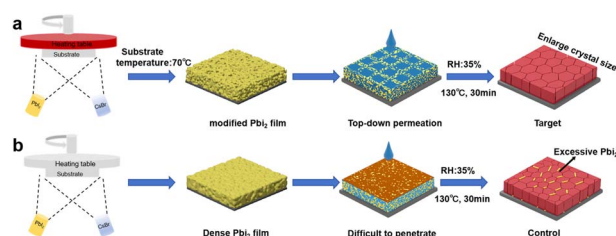


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Insights into the hybrid evaporation-spin coating method: process optimization and consequences for wide band gap perovskite solar cells

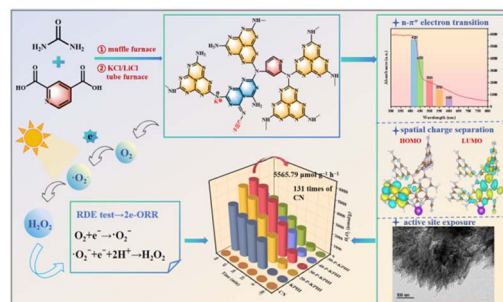
Zheng Zhang,* Ze Liu, Manlong Zhi, Jiaqi Zhao, Jie Lian, Zhixing Yu, Yingnan Guo, Xiaoyang Liang and Zhiqiang Li*



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Propelling solar-to-H₂O₂ conversion of a molecularly tunable covalent heptazine skeleton with boosted spatial charge separation and awakened n- π^* electron transitions

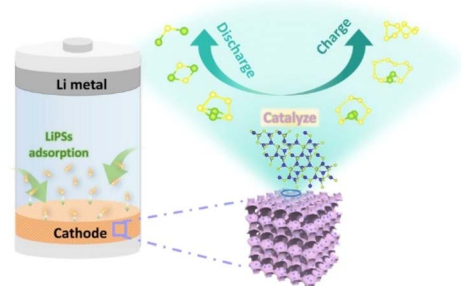
Yuhan Yan, Liang Wang,* Tianyu Zhou,* Jiaqi Sun, Jihan Zhao, Dongshu Sun, Chunbo Liu,* Bo Hu and Guangbo Che



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Co₃Se₄ nanoparticles anchored on an inverse-opal skeleton as a sulfur host for high-performance Li-S batteries

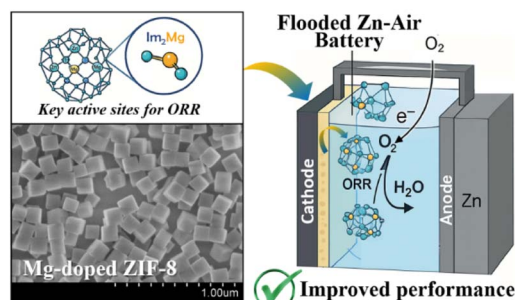
Lijun Wang, Jian Guo, Qiuxian Wang, Daixin Ye, Rongrong Miao, Ting He,* Ya Tang,* Hongbin Zhao* and Jiujun Zhang



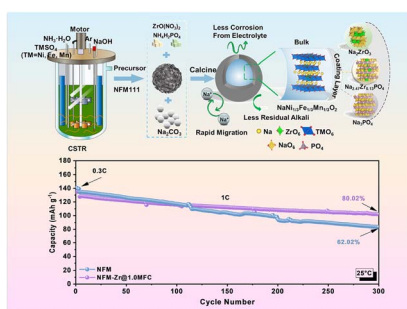
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Bimetallic Mg/Zn-based zeolitic imidazolate frameworks for zinc-air batteries: disclosing the role of defective imidazole-Mg sites in the electrocatalytic performance

Valentín García-Caballero, José A. Salatti-Dorado, Luis Camacho, Manuel Cano,* Antonio J. Fernández Romero, Juan J. Giner-Casares and Carolina Carrillo-Carrión*



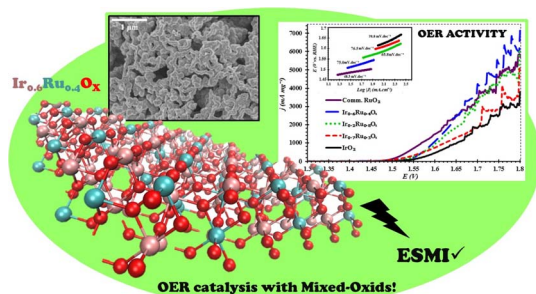
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A one-step dual modification strategy for enhancing sodium storage in O3-type $\text{NaNi}_{1/3}\text{Fe}_{1/3}\text{Mn}_{1/3}\text{O}_2$ cathodes

Yan Wang, Mengjie Zhang, You Shi, Huan Liu,^{*} Dan Sun,^{*} Xiaobing Huang,^{*} Ning Ding, Yan Xu, Yougen Tang and Haiyan Wang^{*}

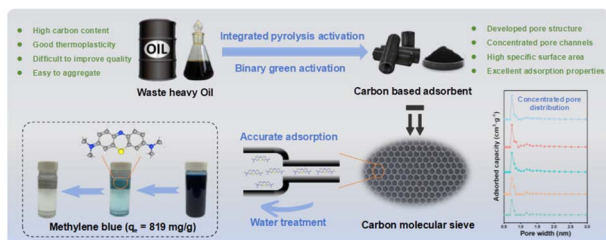
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Precision engineering for optimizing multi-metallic IrRuO_x catalysts via electronic structure quantification for sustainable hydrogen production

Haideh Balali Dehkordi, Mohammad Zhiani,^{*} Chang-Feng Yan, Junwu Xiao, Zhuoxin Lu, Hong-Yi Tan, Mohsen Vafaei, Mokhtar Nasrollahpour and Rui-Kang Yuan

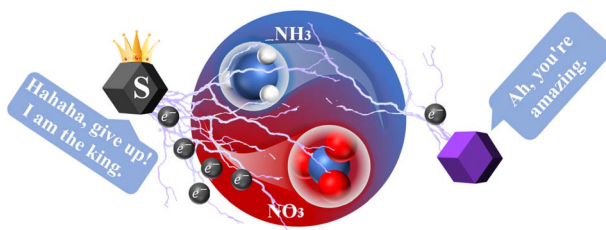
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Sustainable synthesis of porous carbon with molecular sieve-like properties from waste biomass-derived heavy oil via dual green activation strategy for enhanced aqueous environmental remediation

Gang Wu, Yankun Wang, Yunwei Zhang, Shuchang Liu, Ming Ni, Yinhai Su and Huiyan Zhang^{*}

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ZIF-derived CoS@CN with a hollow cage structure for improved electrochemical nitrate reduction to synthesize ammonia

Yanli Zhang, Jiuqing Xiong, Xuyang Wang, Ming Li,^{*} Shihai Yan^{*} and Bingping Liu^{*}

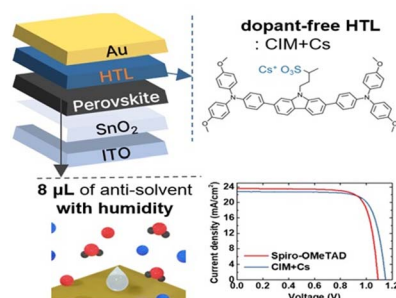


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20791

Synergistic optimization of minimal antisolvent processing and dopant-free HTMs for high-efficiency perovskite solar cells

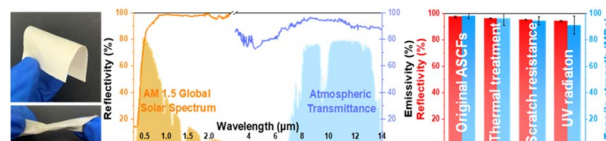
Eun Seo Oh, Jinyoung Kim, Yuya Ohkura, Toshiaki Ito, Yuichiro Hayashi, Hideaki Takahashi, Hiroshi Sato, Naoyuki Shibayama, Tsutomu Miyasaka, Simon MoonGeun Jung* and Gyu Min Kim*



20802

Radiation-cooled aramid composite films featuring tunable TiO₂ nanorod arrays anchored on the surface of 2D mica nanosheets for passive daytime radiative cooling applications

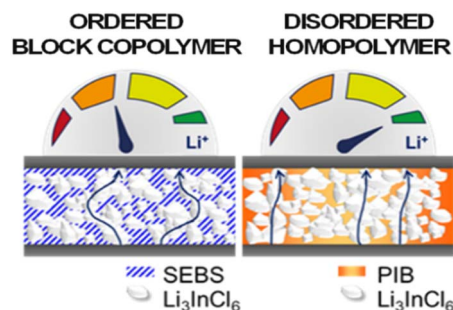
Bo Ma, Wei Guo, Jixiang Zhang,* Cui Liu, Nian Li, Shudong Zhang* and Zhenyang Wang*



20812

Unveiling the crucial morphological effect of non-conducting polymer binders on inorganic-rich hybrid electrolytes

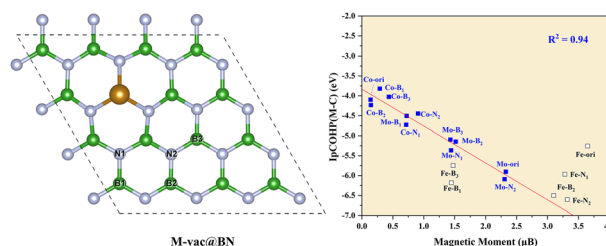
Natalia Stankiewicz, Leon Focks, Mengyang Cui, Mercedes Fernandez, Evgenii Modin, Amaia Iturrospe, Oier Pajuelo-Corral, Erik Simon, Arantxa Arbe, Peter Siffalovic, Gillian R. Goward, Andrey Chuvilin and Irune Villaluenga*



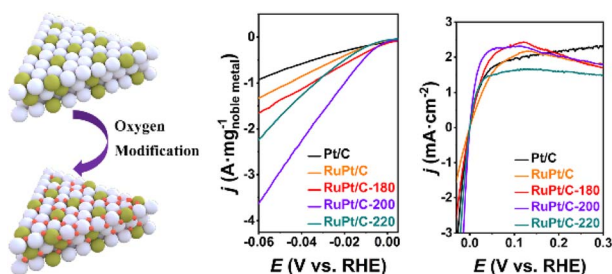
20825

Regulation of transition metal atoms supported on defective h-BN by adjacent monovacancies for electrochemical CO₂ reduction: mechanism and d-band spin-polarization effect

Wenjie Wang,* Meiyun Zhang, Jinhao Zhou and Bingfeng Fan



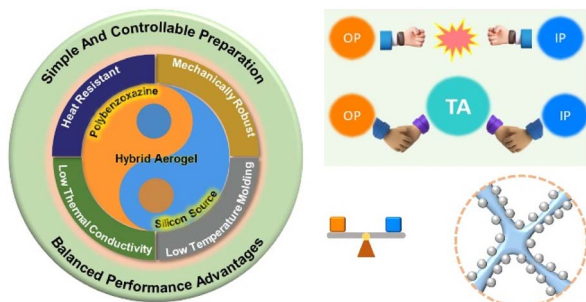
20838



Oxygen-modified supra-nanometer-sized RuPt for robust alkaline HER/HOR

Youpeng Cao, Hongling Liu, Yuxuan Xiao, Lun Li, Jiao Yang, Chunfa Liu, Chengcheng Zhong, Wendi Zhang, Shuyang Peng, Junge Yang, Zhichao Yu, Weng Fai Ip and Hui Pan*

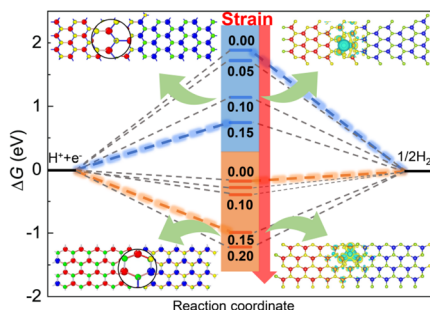
20850



A robust heat-insulating organic-inorganic hybrid aerogel with a green preparation strategy inspired by diatoms

Zibo Hua, Zhiqiang Wei, Ming Liu, Fanjun Guo, Tao You, Zidie Song, Ziqiao Wang, Yudong Huang, Li Liu* and Mingqiang Wang*

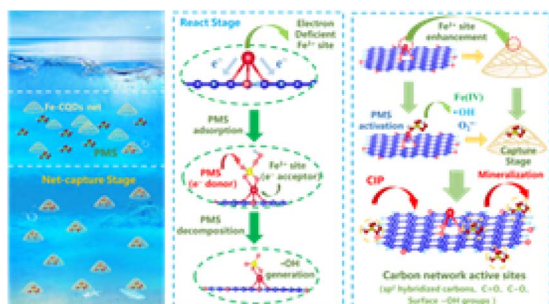
20859



Wrinkles in 2D TMD heterostructures: unlocking enhanced hydrogen evolution reaction catalysis

Kai Ren, Feifan Wang, Tianyang Liu, Huasong Qin* and Yu Jing*

20868



Network capture effect-driven enhanced activation of peroxydisulfate by iron-doped carbon quantum dots derived from ferrous gluconate for efficient ciprofloxacin degradation: DFT calculations and mechanism analysis

Songru Xie, Longbo Jiang,* Wei Liu, Qiaomei Lu, Guanjin Zeng, Hou Wang, Jiajia Wang, Xingzhong Yuan, Haoyun Chen* and Haiwei Jiang*

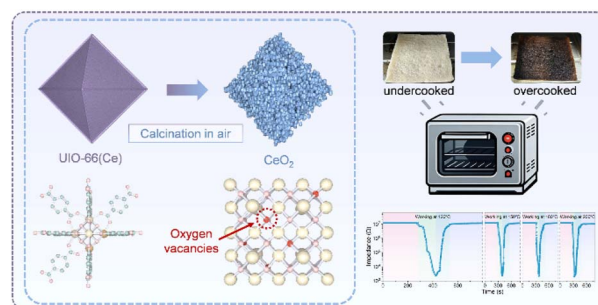


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20884

Oxygen vacancy dual regulation strategy realizes wide humidity range monitoring of UIO-66(Ce)-derived CeO₂ for intelligent food manufacturing

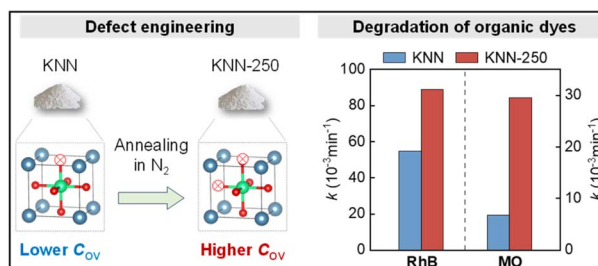
Huimin Zhang, Yu Liu, Qi Li, Xinlu Zhao, Mingze Sun, Jiaxin Hou, Chuanyu Guo,* Chaobo Huang, Xiaoli Cheng, Lihua Huo, Minghui Yang* and Yingming Xu*



20894

Defect engineering-driven enhancement of piezocatalysis in (K, Na)NbO₃ lead-free piezocatalysts

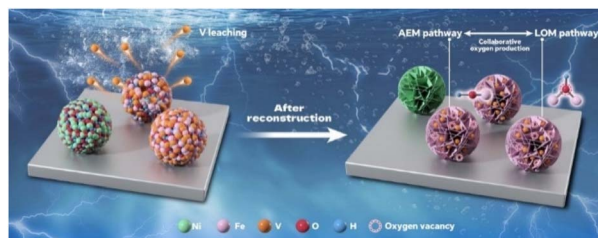
Jinxuan Ren, Haoran Li, Xuzong Wang, Qiang Chen, Qiong Liu,* Fuyuan Zheng, Duan Wang, Yinchang Ma, Xi-xiang Zhang, Xiang Lv* and Jiagang Wu



20905

In situ self-reconstruction and oxygen evolution reaction mechanism study of Ni–Fe–V hydroxide synthesized by electrodeposition

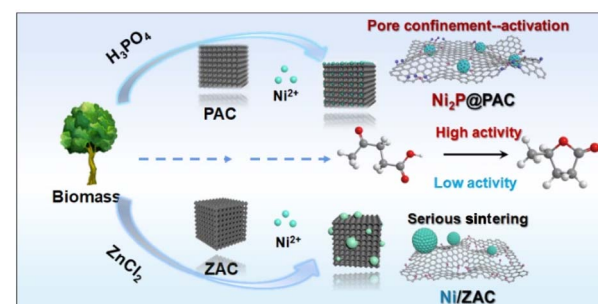
Kaijin Guo, Mingliang Li, Yahao Liu, Zhihui Zhu, Mengfei Wang, Xuewen Tang and Guangming Zhu*



20924

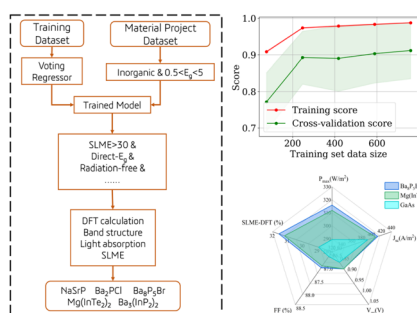
Sintering-resistant and active-species-adjustable Ni catalysts supported on P-doped biochar via nanopore-confined activation for efficient levulinic acid hydrogenation

Xiaohao Liu, Dali Han, Jinming Xia, Dongxu Yan, Rui Diao, Fenglei Qi, Zhenyu Wang, Lei Yang, Xiang Wu, Peiyong Ma* and Ying Zhang



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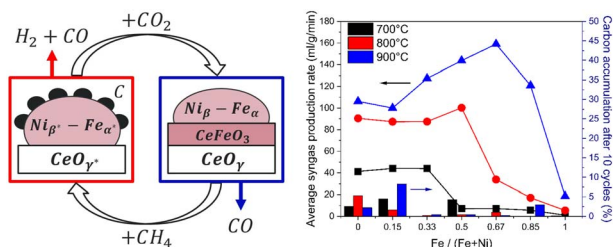
20934



Accelerated screening for high-efficiency inorganic photovoltaic materials: from ensemble voting regression to device performance

Lu-Di Zhang and Hong-Jian Feng*

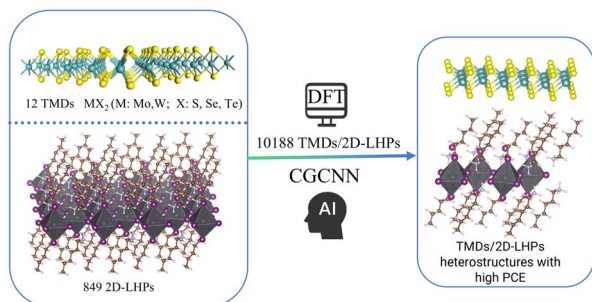
20942



Nickel-catalyzed simultaneous iron and cerium redox reactions for durable chemical looping dry reforming of methane

Minjung Kim, Michael Tomechko and Shang Zhai*

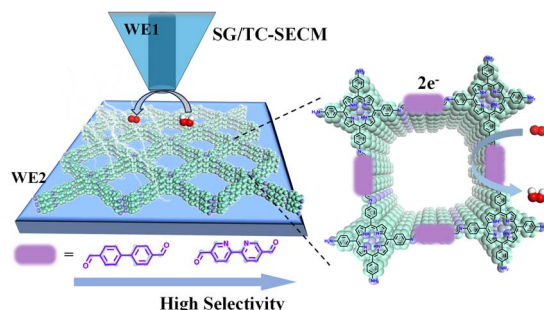
20955



Synergistic screening of high-performance TMDs/2D-LHPs heterostructures for solar cells via deep learning and DFT

Congsheng Xu, Gang Guo* and Gencai Guo

20965



Linker polarization engineering in covalent organic frameworks enabling metal-free electrocatalysts for high-efficiency oxygen reduction

Yue Wang, Hongxing Han, Jiawei Liu, Jiaqi Lv, Yushan Wang, Qiaoling Guo and Kaiwei Yang*

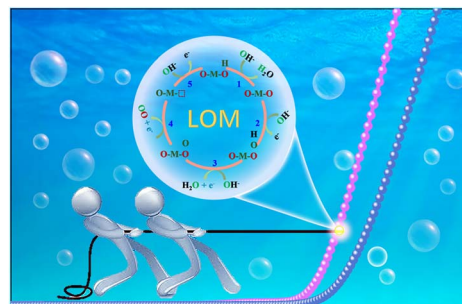


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20974

Boosting oxygen evolution via lattice oxygen activation in high-entropy perovskite oxides

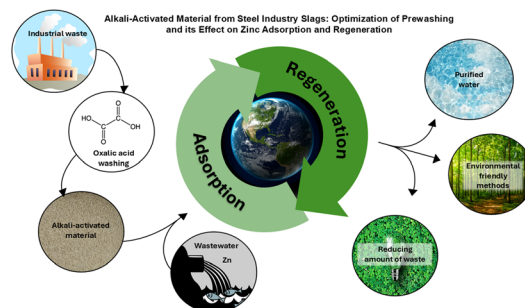
Xiaorong Jiao, Yutian Lei, Yin Liu, Zinan Huang, Xiangnan Wang, Zitong Liu, Changwei Shi, Xingmao Jiang, Congcong Xing, Xiang Wang* and Andreu Cabot*



20984

Alkali-activated materials from steel industry slags: optimization of prewashing and its effect on zinc adsorption and regeneration

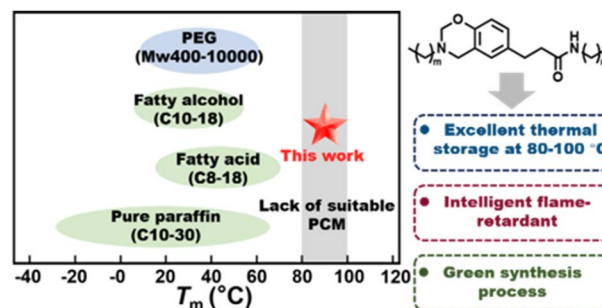
M. Korhonen, P. Dahl, T. Kangas, S. Tuomikoski, A. Heponiemi, T. Hu, U. Lassi and H. Runtti*



20998

Molecularly engineered bio-based benzoxazine for organic phase change materials with latent flame retardancy and 80–100 °C thermal storage applications

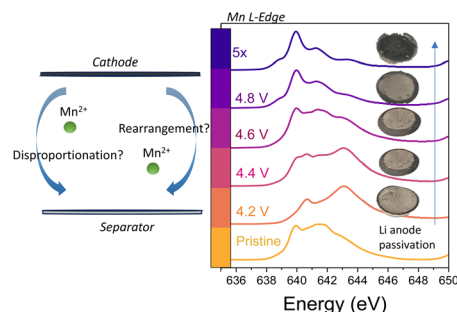
Yiqing Wang, Jingkai Liu,* Li Jia, Jinyue Dai and Xiaoqing Liu



21009

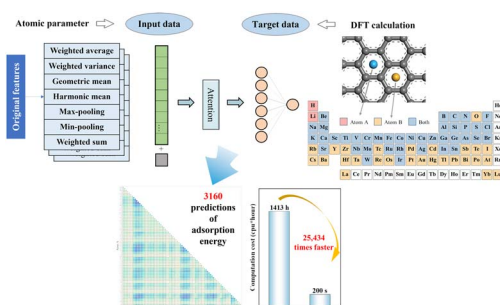
Understanding the Mn dissolution mechanism in rock salt-type $\text{Li}_4\text{Mn}_2\text{O}_5$ cathodes

Monica Theibault, Dennis Nordlund, Chaochao Dun, Jeffrey Urban, Wei Tong* and Marca Doeff*



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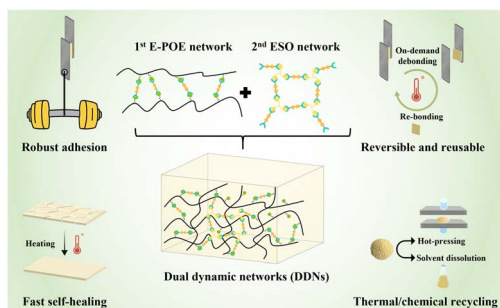
21021



Integration of a self-attentive neural network and density functional theory for accelerated screening of graphene-based stabilized binary adsorption systems

Jiaying Chen, Yong Liu, Longlong Dong,* Longfei Guo, Jingteng Xue, Zongfan Wei and Jingchuan Zhu*

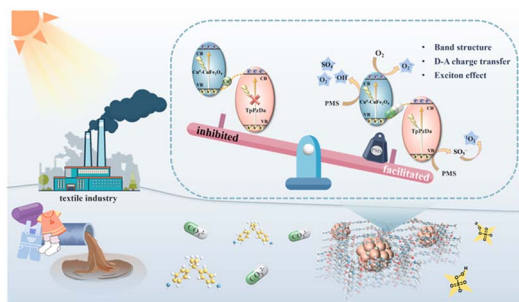
21035



Engineering tunable dual dynamic networks toward strong yet reversible adhesion, healable and recyclable polyolefin elastomer-based adhesives

Wei Liu, Xinghuo Wang, Yongdong Fang* and Yukun Chen*

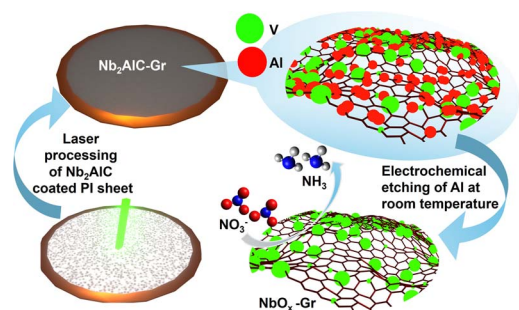
21048



Efficient photo-degradation of BPA in textile wastewater assisted by primitive carbonate: the exceptional contribution of PMS in magnetic $\text{Cu}^0\text{-CuFe}_2\text{O}_4\text{@TpPzDa}$ COF S-scheme heterojunctions

Manman Zhang, Yuanyue Wu, Huihan Cao, Juan Xu, Jingjing Deng* and Tianshu Zhou*

21063



Electrochemical nitrate reduction to ammonia using laser-processed Nb_2AlC : the role of effective Al etching

Shaista Nouseen, Sujit Deshmukh, Michal Langer, Michal Otyepka and Martin Pumera*

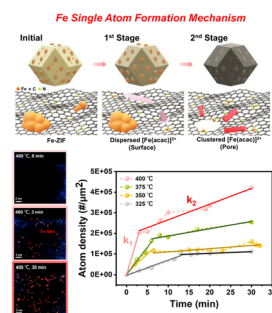


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21077

Atomic-scale visualization of single atom formation in metal–organic frameworks

Kai-Yuan Hsiao, Yi-Dong Lin, Yu-Ru Lin, Ching-Wei Chin, Chun-Hui Lin, Ruei-Hong Cyu, Yan-Gu Lin, Yu-Lun Chueh and Ming-Yen Lu*



CORRECTIONS

21086

Correction: A gas diffusion nanocomposite layer with a hydrophilic–superhydrophobic columnar interface for enhanced water and gas transport

Taesik Eom,* Seungcheol Shin, Myungjin Hong, Eun Sang Lee and Sang Eui Lee*

21087

Correction: Dual-phase modulation via Mo doping and Li_3PO_4 coating for stabilized $\text{LiNi}_{0.9}\text{Mn}_{0.07}\text{Co}_{0.02}\text{Al}_{0.01}\text{O}_2$ cathodes in high-energy lithium-ion batteries

Srinivasan Alagar, Jun Kim, Eun-Jung Shin, Alex Ditter, David A. Shapiro, Namdong Kim, Won Gi Hong, Hyungsub Kim,* Young-Sang Yu,* Gi Dae Park* and Sang Mun Jeong*

