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Elemental answers

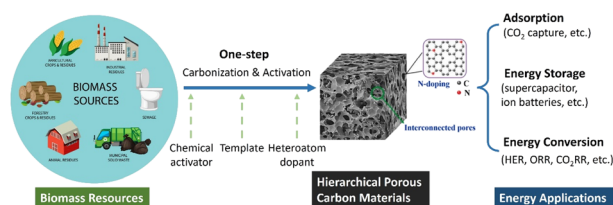


REVIEWS

6211

One-pot synthesis of biomass-derived porous carbons for multipurpose energy applications

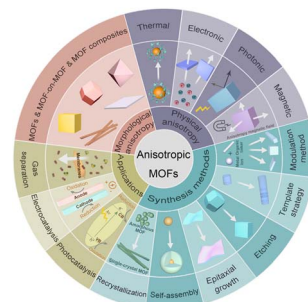
Yafei Shen* and Yupeng Zhu



6243

Anisotropy of metal–organic framework and their composites: properties, synthesis, and applications

Yiyao Lu, Huijie Zhou, Hui Yang, Zhen Zhou, Zhaocheng Jiang and Huan Pang*

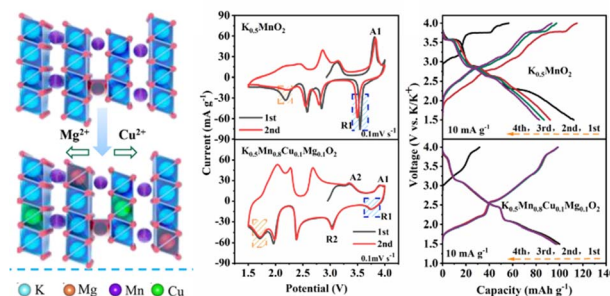


COMMUNICATION

6261

Layer-structured $K_{0.5}Mn_{0.8}Cu_{0.1}Mg_{0.1}O_2$ for high-performance potassium-ion batteries by alleviating the phase transformation

Hong Chen, Xuan-Wen Gao, Qi Li, Run-Ze Niu, Shuai-Shuai Wang, Qin-Fen Gu, Jian-Jia Mu and Wen-Bin Luo*

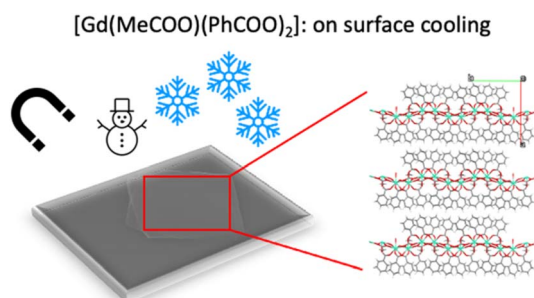


PAPERS

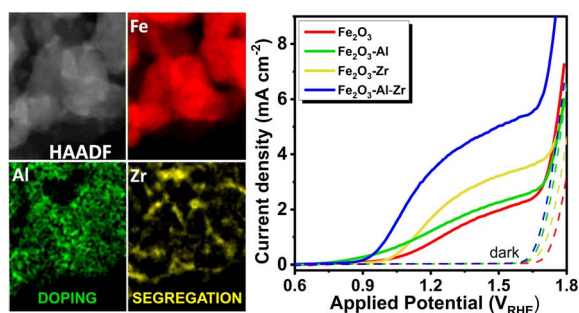
6269

On-surface magnetocaloric effect for a van der Waals Gd(III) 2D MOF grown on Si

Subodh Kumar, Guillem Gabarró Riera, Ana Arauzo, Jakub Hrubý, Stephen Hill, Lapo Bogani, Juan Rubio-Zuazo, Jesús Jover, Elena Bartolomé* and E. Carolina Sañudo*



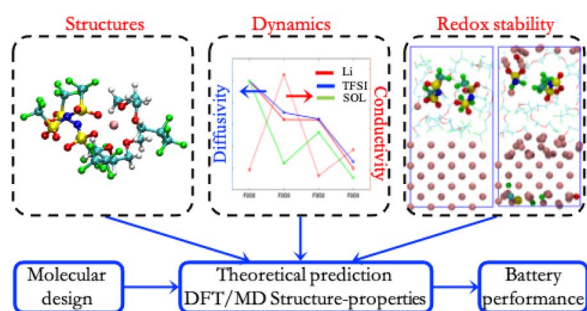
6280



Dual modification on hematite to minimize small polaron effects and charge recombination for sustainable solar water splitting

Nathália C. Verissimo, Fabio A. Pires, Ingrid Rodríguez-Gutiérrez, Jefferson Bettini, Tanna E. R. Fiuza, Cleyton A. Biffe, Fabiano E. Montoro, Gabriel R. Schleder, Ricardo H. R. Castro, Edson R. Leite and Flavio L. Souza*

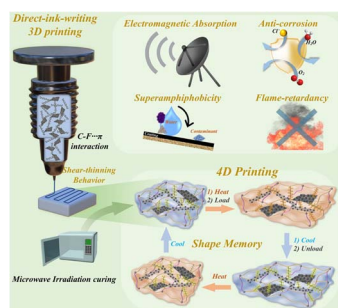
6294



Simulation guided molecular design of hydrofluoroether solvent for high energy batteries

Zhou Yu, Zhangxing Shi, Sambasiva R. Bheemireddy, Ethan Kamphaus, Xingyi Lyu, Mohammad Afsar Uddin, Zhiguang Li, Zhenzhen Yang, Tao Li, Jeffrey S. Moore, Lu Zhang* and Lei Cheng*

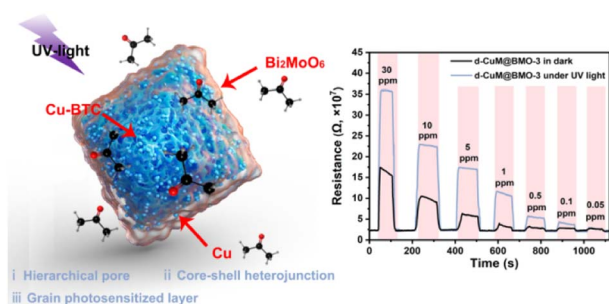
6302



4D printing MOF-derived/multi-fluorination nanocomposites for ultra-efficient electromagnetic wave absorption and robust environment adaptivity

Kun Li, Liuwenlin Han, Tiancheng Wang, Junying Zhang* and Jue Cheng*

6318



Dual regulation of hierarchical porosity and heterogeneous interfaces in Cu-BTC/Bi₂MoO₆ for thermally-driven and UV-light-activated selective acetone sensing

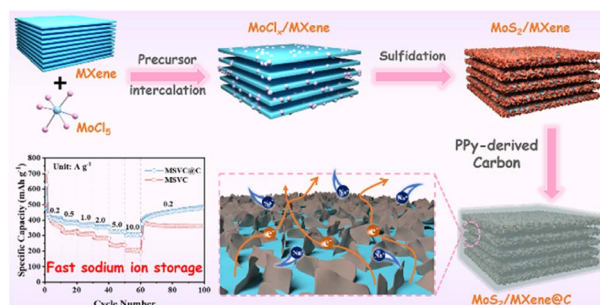
Zhuo Liu, He Lv, Shuang Li, Yue Sun, Xiaoyu Chen and Yan Xu*



6329

A hierarchical nano-MoS₂ flake/micro-MXene lamellar complex structure within a carbon coating for rapid sodium-ion storage

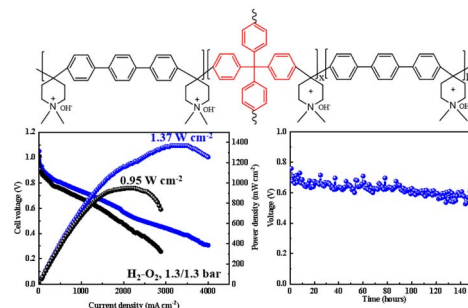
Bingjie Wen, Nizao Kong, Min Huang, Liqin Fu, Yexin Tian, Zhixiao Liu, Zhongchao Wang, Lezhi Yang and Fei Han*



6341

Four-arm star-shaped high-performance poly(aryl piperidine) anion exchange membranes for fuel cells

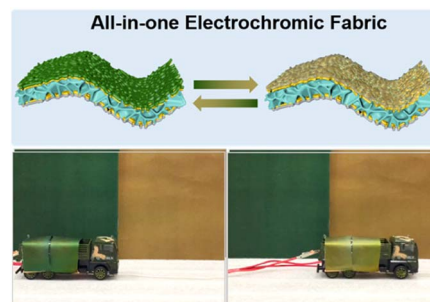
Long Han, Shoutao Gong, Xinli Zhang, Min Yang, Xiaoming Yan, Gaohong He and Fengxiang Zhang*



6351

Highly integrated all-in-one electrochromic fabrics for unmanned environmental adaptive camouflage

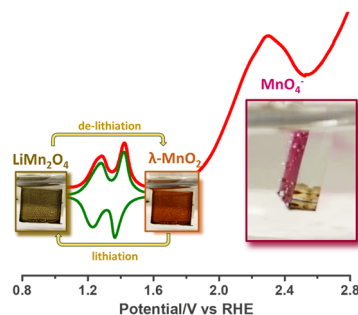
Guoxing Fu, Hui Gong, Jinheng Xu, Biying Zhuang, Baoli Rong, Qianqian Zhang,* Xiaoqing Chen,* Jingbing Liu and Hao Wang*



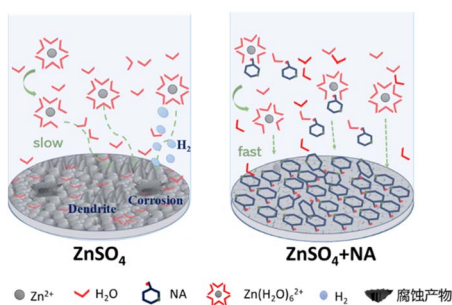
6359

Manganese oxide-based mesoporous thin-film electrodes: manganese disproportionation reaction in alkaline media

Irmak Karakaya Durukan, Işıl Ulu and Ömer Dag*



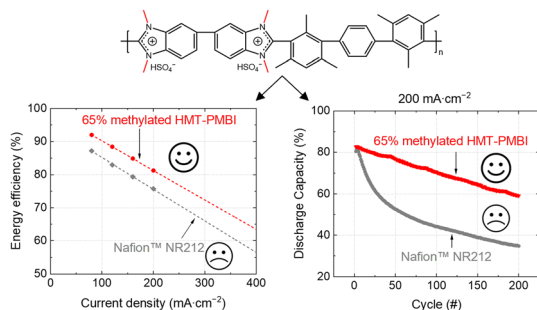
6376



Nicotinic acid additive with a double regulating mechanism for high-performance aqueous zinc ion batteries

Hongzhi Wang, Huanhuan Wang, Weiguo Zhang,*
Leshan Yan and Suwei Yao

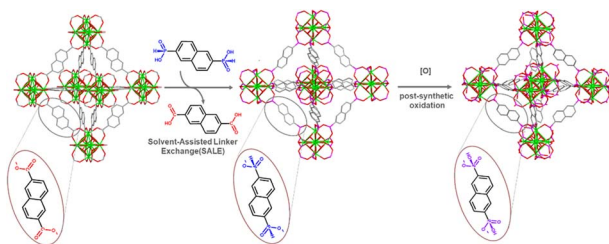
6387



Design of polybenzimidazolium membranes for use in vanadium redox flow batteries

J. C. Duburg, B. Chen, S. Holdcroft, T. J. Schmidt
and L. Gubler*

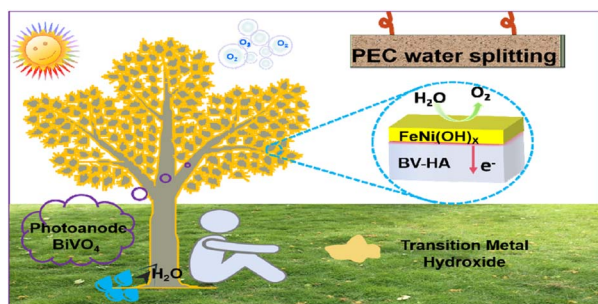
6399



A synthetic strategy towards single crystals of Zr₆ cluster and phosphonate-based metal–organic frameworks

Haomiao Xie, Kent O. Kirlikovali, Zhijie Chen,
Karam B. Idrees, Timur Islamoglu and Omar K. Farha*

6405



Modulation of charge-transfer behavior *via* adaptive interface treatment for efficient photoelectrochemical water splitting

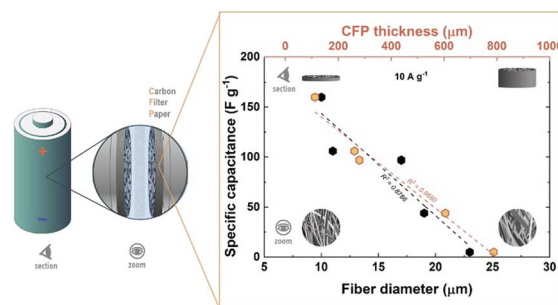
Jingjing Quan, Jing Wang, Kunlin Hai, Xingming Ning*
and Xinbing Chen*



6412

Synthesis and performance of binder-free porous carbon electrodes in electrochemical capacitors

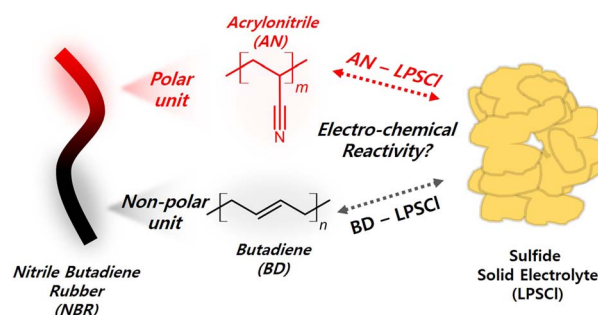
Anetta Platek-Mielczarek, Adrian Beda, Krzysztof Fic* and Camelia Matei Ghimbeu*



6426

Revealing interfacial parasitic reactions of nitrile rubber binders in all-solid-state lithium batteries

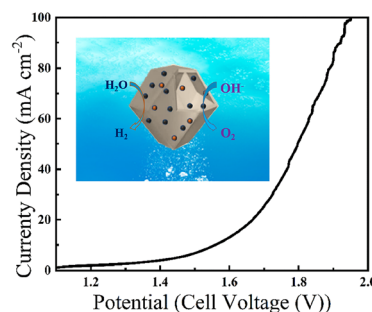
Jaecheol Choi,* Ju Young Kim, Seok Hun Kang, Dong Ok Shin, Myeong Ju Lee and Young-Gi Lee*



6438

Hollow structural materials derived from a MOFs/polymer loaded CoRu alloy for significantly boosting electrochemical overall water splitting

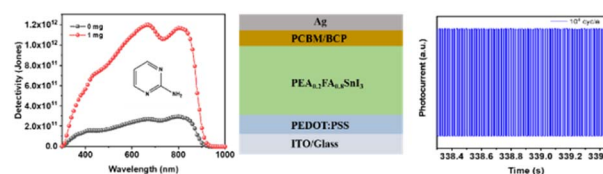
Yin Hu, Congcong Wang, Ying Liu, Hongyan Lin and Kai Zhang*



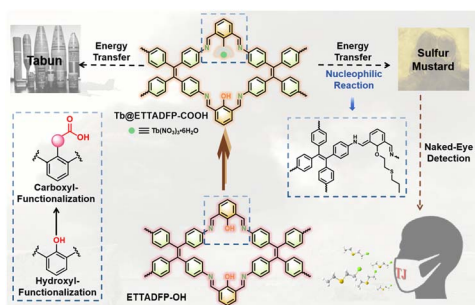
6446

A highly sensitive self-powered photodetector based on pinhole-free $PEA_{0.2}FA_{0.8}SnI_3$ films with aminopyrimidine

Meiyue Liu, Yuanchuang Li, Xiang Yao,* Shengjun Li and Hin-Lap Yip*



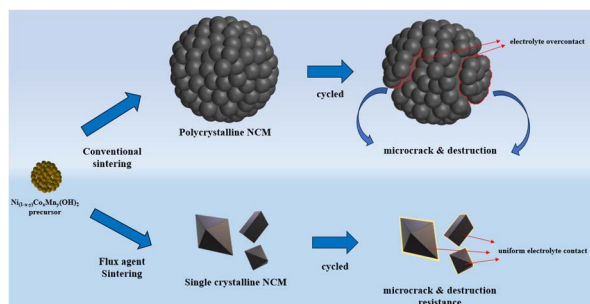
6455



Designing one-dimensional covalent organic frameworks: novel post-synthetic modification on hydroxyl groups and ratiometric detection of chemical warfare agent mimics

Xiaoqin Shen and Bing Yan*

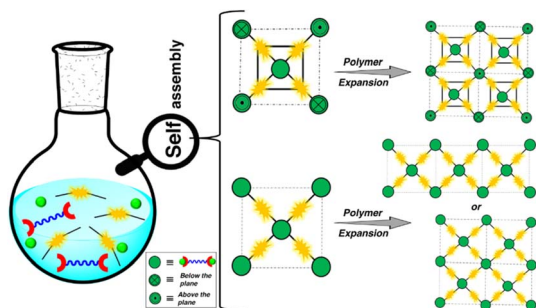
6465



Advanced electrochemical and mechanical performance of a $\text{LiNi}_{0.91}\text{Co}_{0.06}\text{Mn}_{0.03}\text{O}_2$ cathode via use of a NaCl flux agent

Tae-Yeon Shim, Ye-Wan Yoo, Jung-Rag Yoon, Hyun-Soo Kim,* Seung-Hwan Lee* and Jong-Kyu Lee

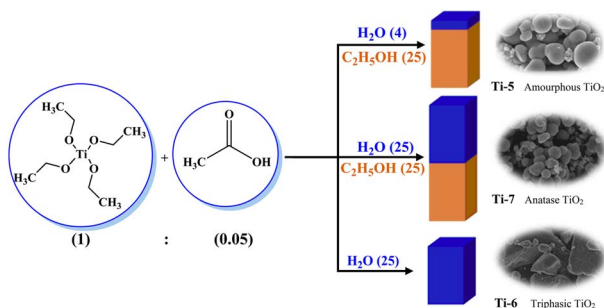
6476



A paradigm shift in the room-temperature self-assembly of tunable metal–organic frameworks composed of flexible neutral linkers with six N-donor atoms and a curved dicarboxylate

Alisha Gogia, Himanshi Bhambri and Sanjay K. Mandal*

6488



Controllable and facile one-pot synthesis of high surface area amorphous, crystalline, and triphasic TiO_2 : catalytic and photocatalytic applications

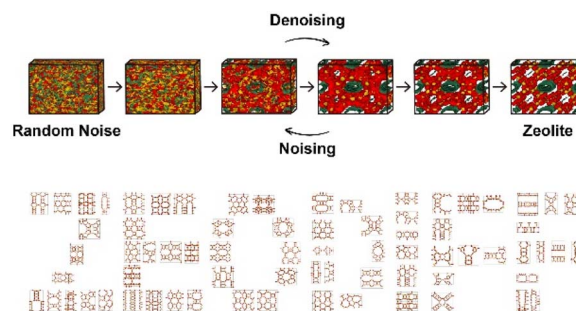
Fateme Ariaeinezhad, Gholamhossein Mohammadnezhad,* Maryam Zare, Oluseun Akintola and Winfried Plass*



6507

Inverse design of porous materials: a diffusion model approach

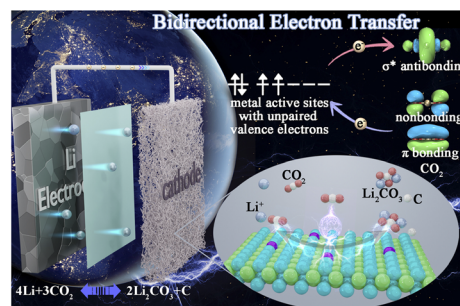
Junkil Park, Aseem Partap Singh Gill,
Seyed Mohamad Moosavi and Jihan Kim*



6515

Bidirectional electron transfer boosts Li–CO₂ electrochemistry

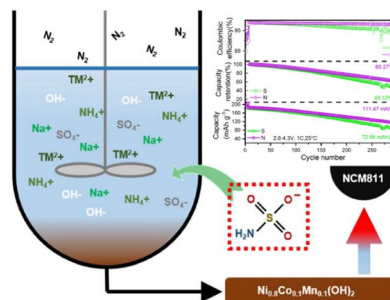
Pengfei Shu, Qiong Peng,* Tingting Luo, Junfei Ding,
Xiu Gong, Jian Zhou, Yadong Yu, Xiaosi Qi*
and Zhimei Sun*



6527

Optimizing NCM811 nickel-rich cathode stability via suppressing asymmetric Li/Ni mixing by a “non-intrusive” strategy

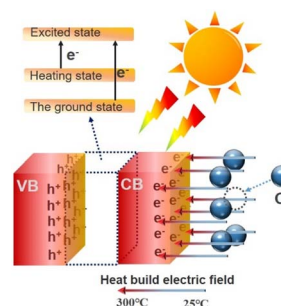
Boyuan Zhu, He Li, Yadong Ning, Zhihui Yu, Long Meng,
Guangye Wei* and Jingkui Qu*



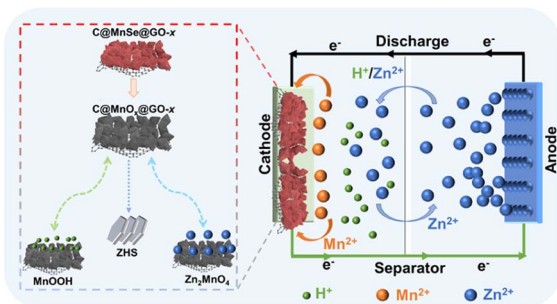
6539

The temperature-controlled optimization of g-C₃N₄ structure significantly enhances the efficiency of photothermal catalytic NO removal

Kai Qi, Guoqiang Tan,* Zihan Lu, Xiangyu Gao,
Zhuoyuan Zhang, Dan Liu, Rui Lv, Da Jing, Peng Luo
and Guohui Dong*



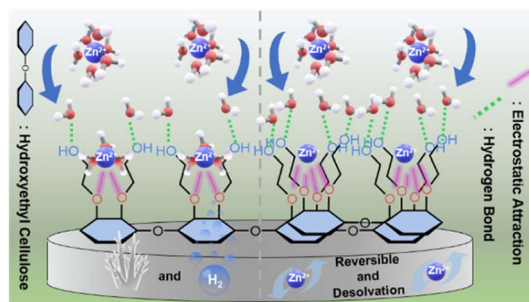
6549



Rationally designed carbon-encapsulated manganese selenide composites from metal–organic frameworks for stable aqueous Zn–Mn batteries

Bin Wang, Wenqi Li, Siyuan Wang, Peng Xie, Peng Wan, Ying Gui and Ding Chen*

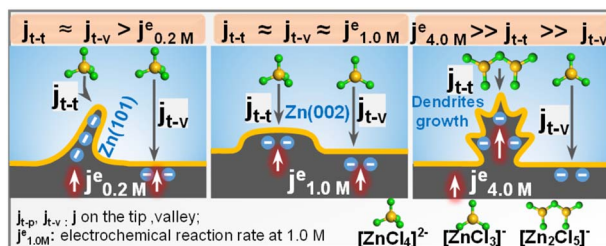
6561



Unveiling the correlation between the thickness and uniformity of the hydroxyethyl cellulose film and its protective effect on the zinc electrode

Sheng Lu, Biao Jiang, Li Zhang, Wei Xia, Yu Gao, Liang Wu, Dongqing Wu* and Han Wang*

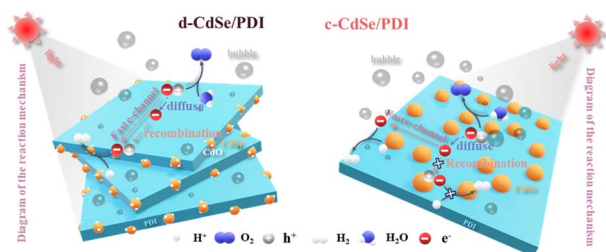
6572



Solvation structure regulation of deep eutectic solvents: stabilization of the zinc anode in rechargeable zinc–air batteries

Yang Song, Yongduo Liu, Shijian Luo, Yuran Yang, Fadong Chen, Meng Wang, Lin Guo,* Siguo Chen* and Zidong Wei

6582



Hydrogen-bonded CdSe/PDI with double electric field synergism for enhanced overall water splitting performance

Jinbo Xue,* Chengkun Lei, Qiurong Li, Zhe Sun, Huimin Li, Shihao Ding, Husheng Jia, Qianqian Shen,* Xuguang Liu and Yongfa Zhu*

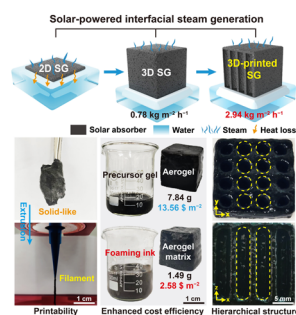


PAPERS

6592

Foaming photothermal inks for direct-ink writing: hierarchical design and enhanced solar-powered interfacial evaporation

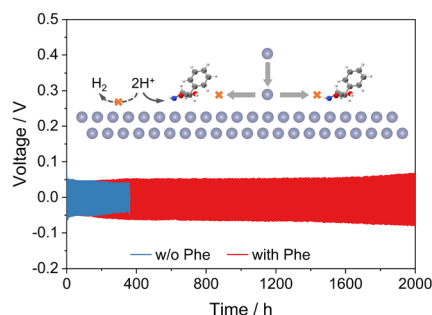
Jie Gao, Ke Shao, Jingjing Li, Na Li, Shuxue Wang, Xiaochun Wu, Petri Murto, Zhihang Wang,* Yingtang Zhou* and Xiaofeng Xu*



6610

A multifunctional phenylalanine additive stabilizing zinc anodes in aqueous zinc ion batteries

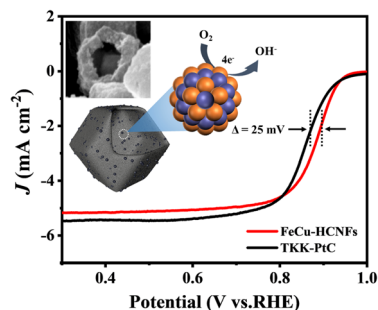
Gang Ni,* Zhiqiu Pan, Guoyin Zou, Fuhu Cao,* Ling Qin, Peng Cui* and Chenggang Zhou



6623

A ZIF-derived hollow carbon nanoframework loaded with FeCu alloy nanoparticles for efficient oxygen reduction reaction and zinc–air batteries

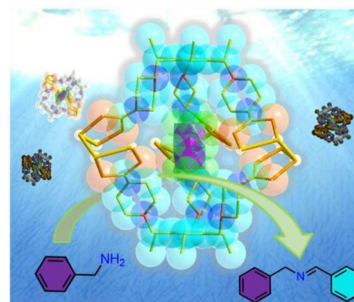
Guangxu Bao, Yaxin Jin, Qun Fan, Xiaoyi Chen,* Xiao Wang, Tianxiang Yan, Haoyuan Chi, Jianlong Lin, Wenquan Cui and Sheng Zhang*



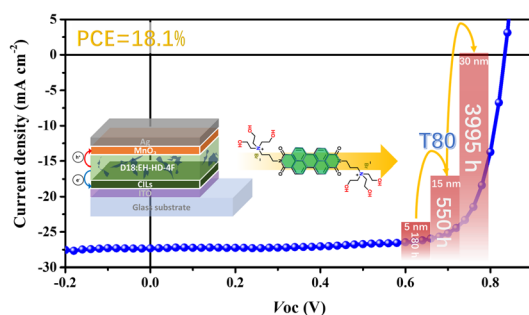
6634

A dynamic {Au^I...Au^I}-coupling cluster-based coordination capsule for photocatalytic benzylamine oxidation

Ping Shang, Yu-Hua Li, Xing-Yu Chen, Yu-Qing Xiao, Xiao-Qian Pu, Kai-Wen Jiang and Xuan-Feng Jiang*



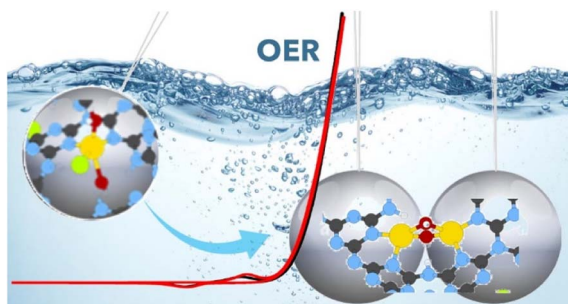
6644



Enhancing the efficiency and stability of inverted binary organic solar cells through hydroxylated perylene diimide derivative cathode interlayers

Li Tian,* Lingwei Feng, Shukui Guo, Renjie Wang, Kai Zhang* and Cheng-Xing Cui*

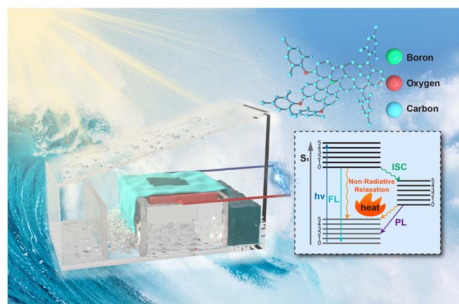
6652



Insights into the active nickel centers embedded in graphitic carbon nitride for the oxygen evolution reaction

Nicolò Rossetti, Aldo Ugolotti, Claudio Cometto, Verónica Celorrio, Goran Dražić, Cristiana Di Valentin* and Laura Calvillo*

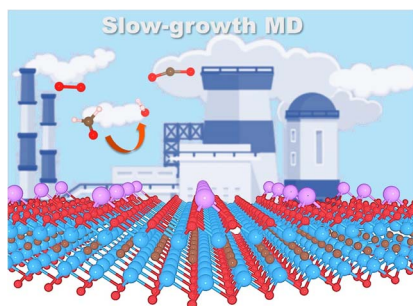
6663



A salt-resistant solar evaporator with organic diradicaloids as photothermal materials for efficient and persistent desalination

Shuo Qi, Liuzhong Yuan, Shuqing Ao, Luoqing Wang, Tao Jia* and Chuandong Dou*

6671



Unveiling the mechanism of thermal catalytic oxidation of HCHO from the kiln exhaust gas using Sc-decorated Cr₂CO₂-MXenes

Jinkai Yang, Zhongyong Zhang, Jiahe Peng, Jieshuo Wan, Zhaohui Liu, Peng Zhang and Neng Li*

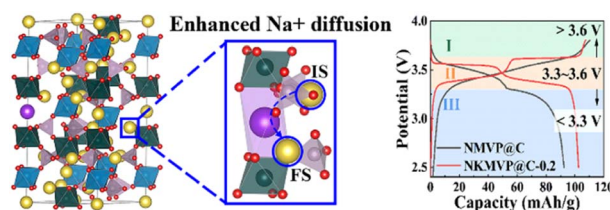


PAPERS

6681

Na-site coordination environment regulation of Mn-based phosphate cathodes for sodium-ion batteries with elevated working voltage and energy density

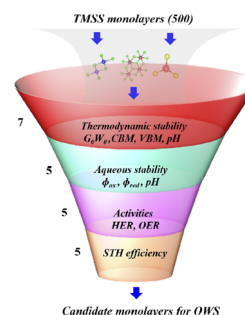
Kairong Wang, Chenxi Gao, Jian Tu, Kunkun Guo and Yuan-Li Ding*



6693

Unraveling the photocatalytic potential of transition metal sulfide and selenide monolayers for overall water splitting and photo-corrosion inhibition

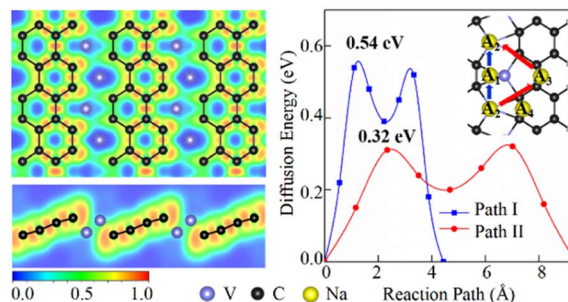
Shafiq Ur Rehman, Junwei Wang, Guixuan Wu, Sajjad Ali, Jian Xian* and Nasir Mahmood*



6703

A novel 2D VC₄ as a promising Na-host material for Na-ion batteries: computational insights

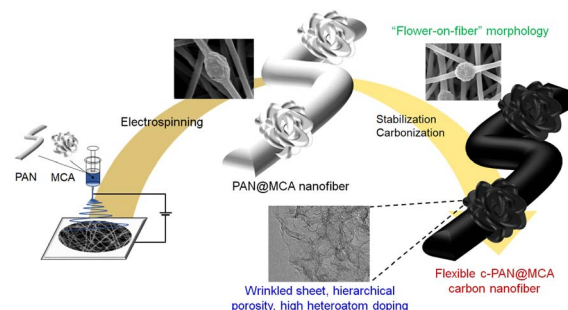
Javed Rehman, Jiayu Gao, Tong Yu,* Adel El-marghany and Guochun Yang*



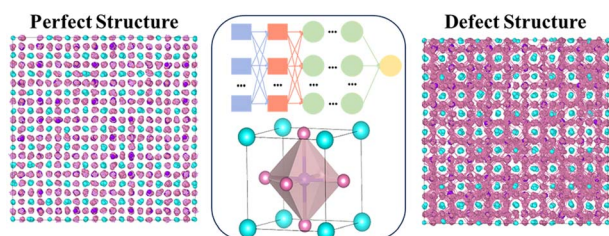
6712

Hydrogen-bonded organic framework-derived, flower-on-fiber-like, carbon nanofiber electrodes for supercapacitors

Woo Jin Mun, Bomi Kim, Seung Jae Moon and Jong Hak Kim*



6724

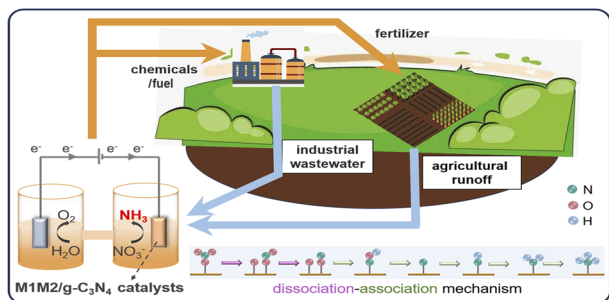


Studying the effect of defects on Li-ion diffusion in Li_3OBr solid state electrolyte by machine learning potential

Exploring the effects of defect concentrations and distribution on Li diffusion in Li_3OBr solid-state electrolyte using a deep potential model

Lirong Xia, Jian Tang, Yufang Chen, Xing Zhou, Zhongyun Ma* and Yong Pei*

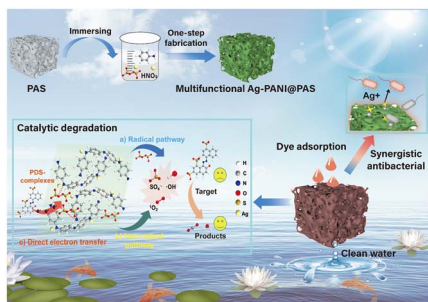
6733



High-throughput screening for efficient dual-atom catalysts in electrocatalytic nitrate reduction to ammonia *via* dissociation–association mechanism

Lingling Lv, Yanqing Shen,* Min Zhou, Yu Zhang, Xianghui Meng, Xin Yang, Nan Zhang, Kexin Wang, Qirui He, Dewei Gong, Qing Ai,* Yong Shuai* and Zhongxiang Zhou*

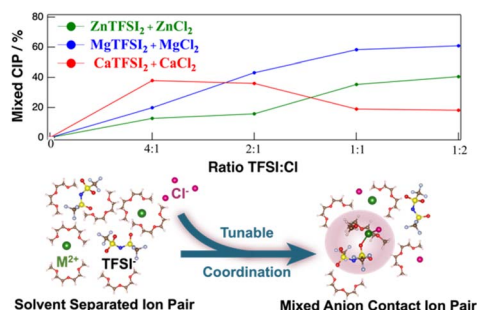
6747



One-step construction of silver–polyaniline nanocomposite modified multifunctional sponges for wastewater remediation: adsorption, catalysis and antimicrobial applications

Huilin Song, Kaidi Zhang, Peiqi Li, Guowen Qin, Wanxin Xiao, Changdong Zhang, Yang Zheng, Yang Ding* and Shunli Ji*

6768



Generalizable, tunable control of divalent cation solvation structure *via* mixed anion contact ion pair formation

Sydney N. Lavan, Stefan Ilic, Shashwat Viswanath, Akash Jain, Rajeev S. Assary and Justin G. Connell*

