

Journal of Materials Chemistry A

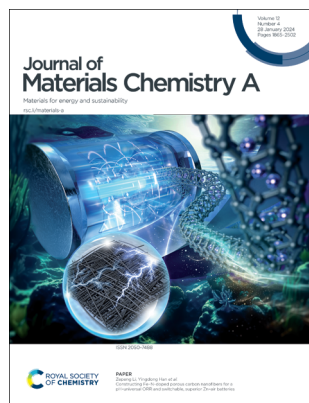
Materials for energy and sustainability

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Inside cover

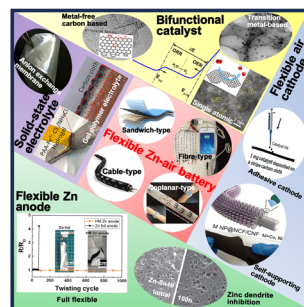
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REVIEWS

1880

Advances in flexible zinc–air batteries: working principles, preparation of key components, and electrode configuration design

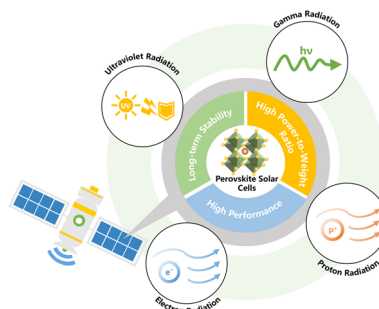
Weiguang Fang, Xinxin Yu, Juanjuan Zhao, Zhiqian Cao, Mingzai Wu,* Derek Ho and Haibo Hu*



1910

Advancements in radiation resistance and reinforcement strategies of perovskite solar cells in space applications

Zhenghao Huan, Yifan Zheng,* Kangpeng Wang, Zicai Shen, Wang Ni, Jifeng Zu and Yuchuan Shao*



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REVIEWS

1923

Processing and properties of jute (*Corchorus olitorius* L.) fibres and their sustainable composite materials: a review

M. Ramesh* and C. Deepa

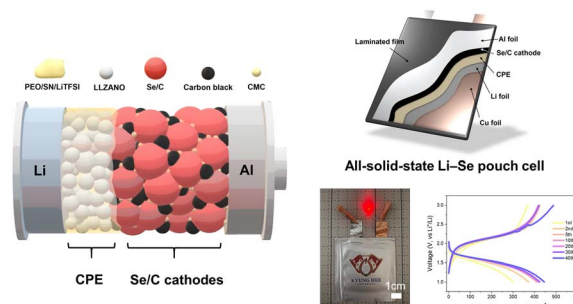


COMMUNICATION

1998

Integration of a composite polymer electrolyte and Se/C cathodes toward high-performance all-solid-state Li–Se batteries

Tae Hwa Hong, Jea Duk Kim, Jung Seok Lee, Yujin Choi, Han Young Jung, Yoon Hak Lee, Sung Yeon Hwang,* KwangSup Eom* and Jung Tae Lee*

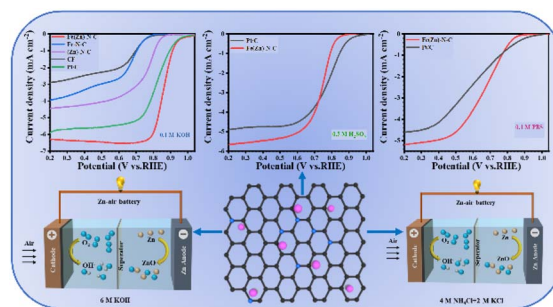


PAPERS

2004

Constructing Fe–N-doped porous carbon nanofibers for a pH-universal ORR and switchable, superior Zn–air batteries

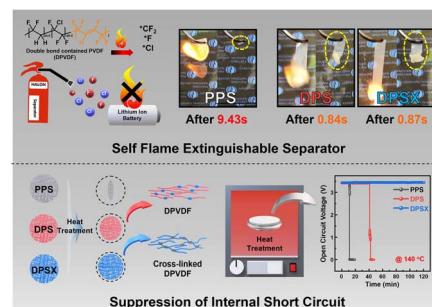
Yu Ma, Yuhan Xiao, Yanfeng Ge, Degong Gao, Yunge Zhang, Zepeng Li* and Yingdong Han*



2011

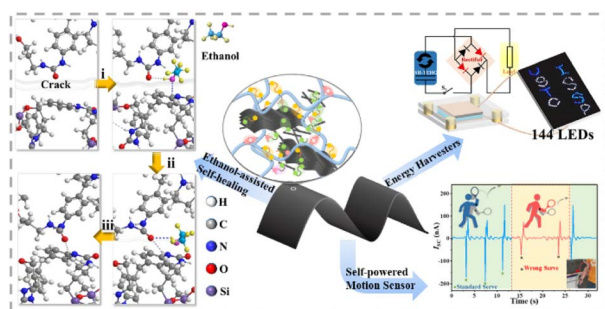
Fluorine-rich modification of self-extinguishable lithium-ion battery separators using cross-linking networks of chemically functionalized PVDF terpolymers for highly enhanced electrolyte affinity and thermal–mechanical stability

Jaewon Park, Young Je Kwon, Jeongsik Yun, Ji Woo Bae, Min Jeong Lee, Kaiyun Zhang, Se Hun Kim, Kang-Jun Baeg, Jin Hong Lee and Kie Yong Cho*



PAPERS

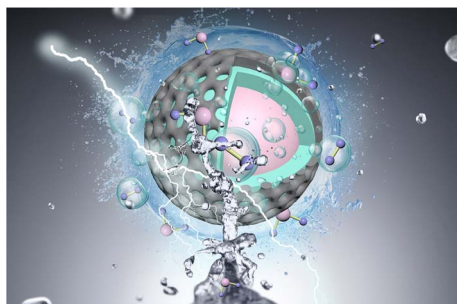
2024



Ethanol-assisted room-temperature rapid self-healing polydimethylsiloxane-polyurea/carbon composite elastomers for energy harvesters and smart sensors

Yiming Du, Hua Wang,* Xiaofei Li, Jincheng Liu, Yanyan Liu, Wei Zhang, Qiang Liu, Yunsheng Da, Hao Li, Zhouping Sun, Yong Dong and Xingyou Tian*

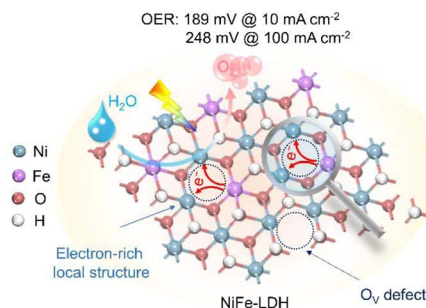
2036



Porous core-shell structured MoO₂-Mo₂C@C electrocatalysts for pH-universal hydrogen evolution reaction

Xinglong Zhang, Tingxi Chen, Ning Lu, Feiyu Jian, Bin Zhu, Yanning Zhang,* Liang He and Hui Tang*

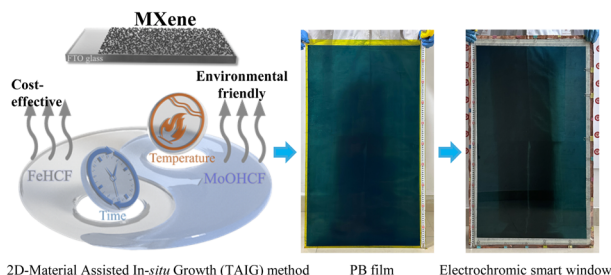
2044



Oxygen-vacancy-mediated electron localization at the nickel sites in nickel/iron layered double hydroxide towards efficient oxygen evolution reaction

Jing Zhang, Meng Li, Zhiqiang Qiao, Kaixuan Huo, Yang Yang, Deqiang Ji, Dandan Yuan, Liyu Lin,* Zhida Li* and Hongjun Wu*

2053



Towards a large-scale and high-performance smart window based on Prussian blue: a revolutionary two-dimensional-material assisted *in situ* growth preparation method utilizing MXene

Maofei Tian, Mengshan Lu, Wenjun Wu, Rongzong Zheng,* Yanbang Tang, Zhongquan Wan, Junsheng Luo and Chunyang Jia*

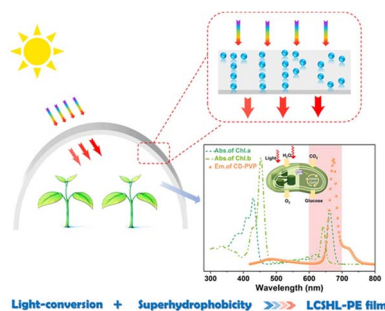


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2070

In situ wrapping carbon dots towards robust, durable and transparent tri-layer films with precise spectral conversion and excellent self-cleaning properties

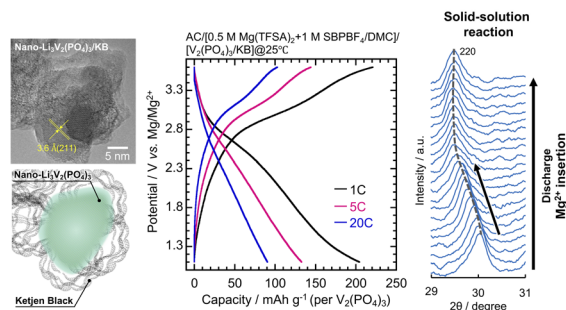
Sainan Zhang and Junhui He*



2081

Ultrafast cathode characteristics of a nano- $V_2(PO_4)_3$ carbon composite for rechargeable magnesium batteries

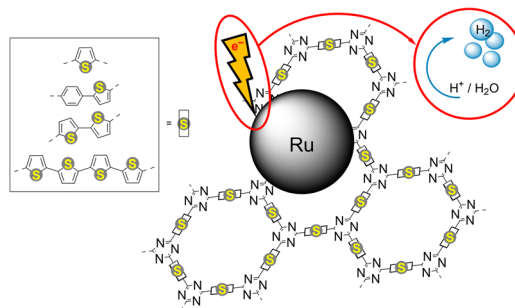
Yuta Harada, Yu Chikaoka,* Marina Kasai, Kyoya Koizumi, Etsuro Iwama, Naohisa Okita, Yuki Orikasa, Wako Naoi and Katsuhiko Naoi*



2093

Ruthenium nanoparticles on covalent triazine frameworks incorporating thiophene for the electrocatalytic hydrogen evolution reaction

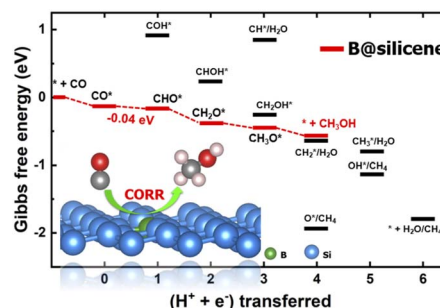
Lars Rademacher, Thi Hai Yen Beglau, Bahia Ali, Linda Sondermann, Till Strothmann, István Boldog, Juri Barthel and Christoph Janiak*



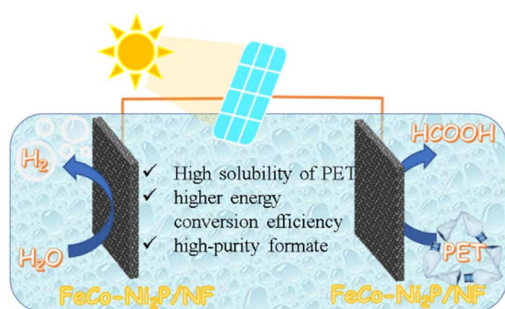
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p-block doped semi-metallic xenes as highly selective and efficient transition-metal free single atom catalysts for electrochemical CO reduction

Huong T. D. Bui and Tore Brinck*



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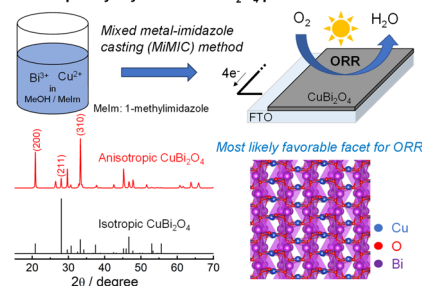


Alcohol–alkali hydrolysis for high-throughput PET waste electroreforming-assisted green hydrogen generation

Ying Li, Li Quan Lee, Hu Zhao, Yunxing Zhao, Pingqi Gao* and Hong Li*

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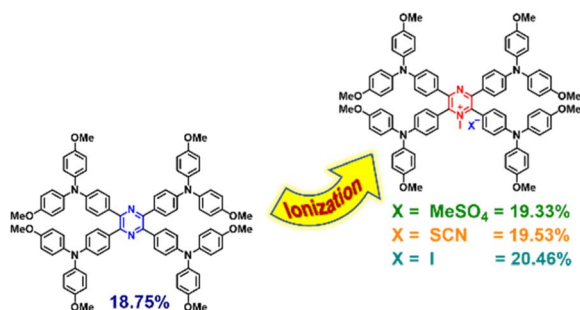
Anisotropically crystallized CuBi_2O_4 photocathode for ORR



Visible-light-driven oxygen reduction by an anisotropically crystallized CuBi_2O_4 photocathode fabricated using a mixed metal-imidazole casting method

Ryohei Sekine, Tetsuya Sato, Zaki N. Zahran,* Yuta Tsubonouchi, Debraj Chandra, Norihisa Hoshino and Masayuki Yagi*

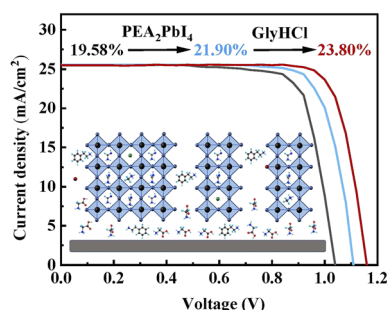
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Ionization of hole-transporting materials as a method for improving the photovoltaic performance of perovskite solar cells

Yogesh S. Tingare,* Chien-Hsiang Lin, Chaochin Su,* Sheng-Chin Chou, Ya-Chun Hsu, Dibyajyoti Ghosh,* Ning-Wei Lai, Xin-Rui Lew, Sergei Tretiak, Hsinhan Tsai,* Wanyi Nie* and Wen-Ren Li*

2151



Performance enhancement of inverted perovskite solar cells using a GlyHCl additive

Haiyang Cheng, Jing Zhuang, Jiupeng Cao, Tianyue Wang, Wai-Yeung Wong and Feng Yan*

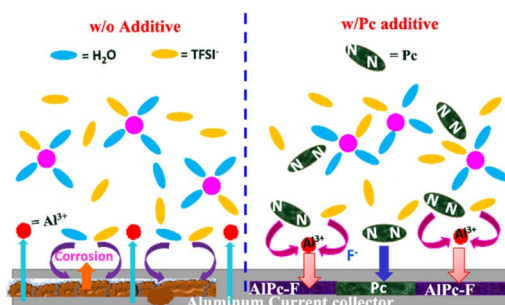


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Enhancing aluminum foil performance in aqueous and organic electrolytes: dual-secure passivation with phthalocyanine as a corrosion inhibitor

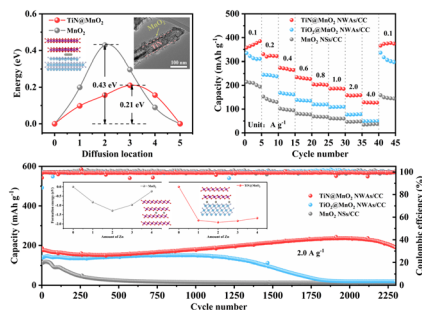
Teshager Mekonnen Tekaligne, Hailemariam Kassa Bezabh, Semaw Kebede Merso, Kassie Nigus Shitaw, Misganaw Adigo Weret, Yosef Nikodimos, Shi-Kai Jiang, Sheng-Chiang Yang, Chia-Hsin Wang, She-Huang Wu, Wei-Nien Su* and Bing Joe Hwang*



2172

High-rate and long-life flexible aqueous rechargeable zinc-ion battery enabled by hierarchical core-shell heterostructures

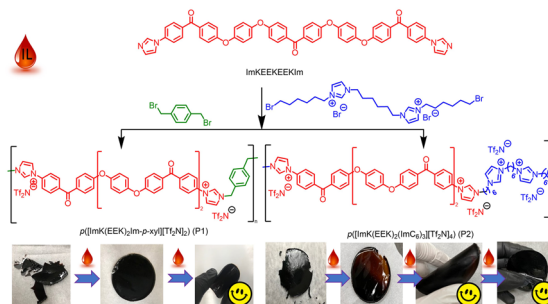
Ziming Xu, Wenyuan Zhang, Xianzhen Wang, Yuxin Li, Jinwen Fu, Yongbao Feng, Wenbin Gong, Jiabin Guo, Pan Xue and Qiulong Li*



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Precisely segmented PEEK-ionene + ionic liquid composite membranes for CO₂ separation

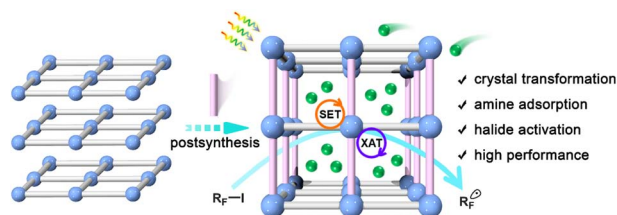
Sudhir Ravula, Ying Chen, Kevin W. Wise, Pravin S. Shinde, Eric D. Walter, Abhi Karkamkar, David J. Heldebrant and Jason E. Bara*



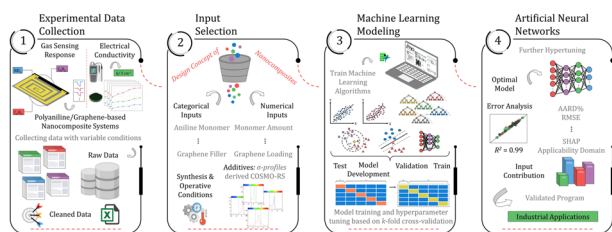
2200

Crystal transformation of metal-organic frameworks to boost visible-light photocatalysis via amine adsorption

Xin Liu, Zhifen Guo, Yan Che, Mengying Li, Xingbing Liu, Fengchao Cui* and Hongzhu Xing*



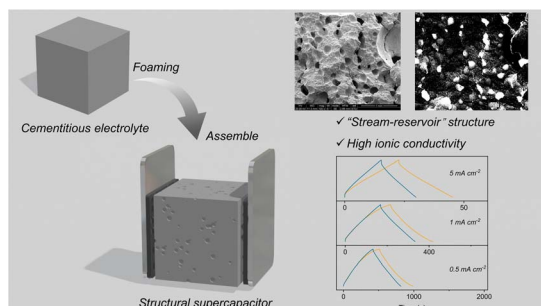
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Enhancing precision in PANI/Gr nanocomposite design: robust machine learning models, outlier resilience, and molecular input insights for superior electrical conductivity and gas sensing performance

Abir Boublia, Zahir Guezout, Nacerddine Haddaoui, Michael Badawi, Ahmad S. Darwish, Tarek Lemaoui, Fawzi Banat, Krishna Kumar Yadav, Byong-Hun Jeon, Nouredine Elboughdiri, Yacine Benguerba* and Inas M. AlNashef

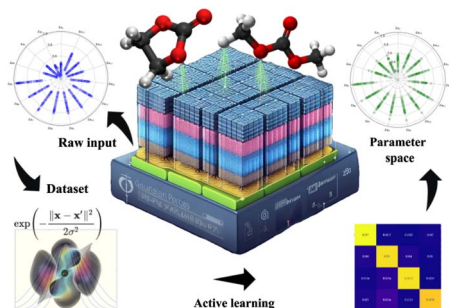
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3D porous cementitious electrolytes with “stream-reservoir” ionic channels for high multifunctional performance structural supercapacitors

Muyang Shi and Dong Zhang*

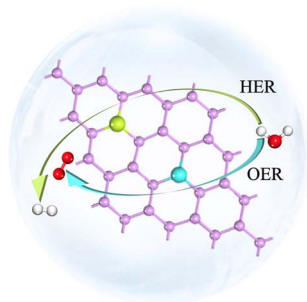
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An active learning approach to model solid-electrolyte interphase formation in Li-ion batteries

Mohammad Soleymanibrojeni, Celso Ricardo Caldeira Rego, Meysam Esmaeilpour and Wolfgang Wenzel*

2267



Unveiling the electrocatalytic potential of main-group metal-doped blue phosphorene for oxygen and hydrogen evolution reactions through a computational study

Hao Hu, Yang-Chun Yong,* Peng Zhang, Wei Tang, Bei-Bei Xiao and Jian-Li Mi*

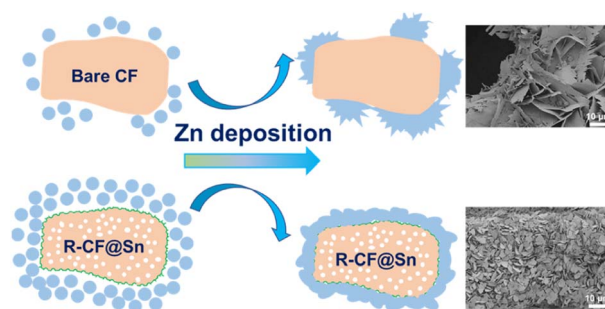


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Zincophilic Sn sites induced the local ion enrichment for compact and homogenous growth of Zn biscuits in long-life Zn metal batteries

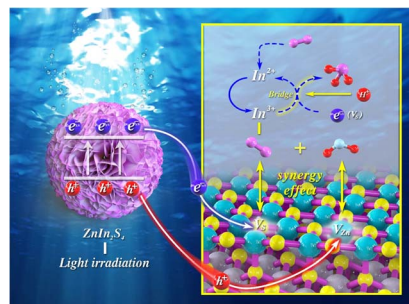
Tiancun Liu,* Yi Xu, Haoyan Fang, Ling Chen, Jiadi Ying, Min Guo, Yeqing Wang, Qi Shen, Xusheng Wang, Yong Wang* and Zhixin Yu*



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Fabrication of site activated and synergistic double vacancy ZnIn_2S_4 for highly efficient bifunctional photocatalysis: nitrogen reduction and oxidative degradation

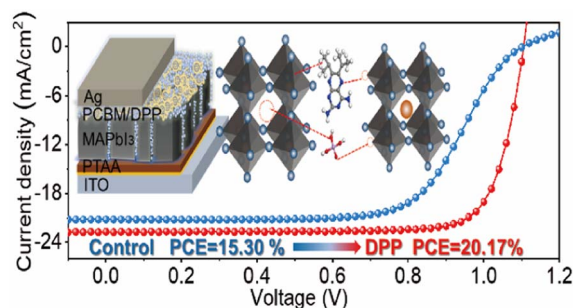
Shengjie Xia,* Ziyang Yuan, Yue Meng, Chen Zhang, Xianglong Li, Zheming Ni and Xueqiang Zhang*



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Simultaneous realization of bulk and interface regulation based on 2,4-diamino-6,7-diisopropylpteridine phosphate for efficient and stable inverted perovskite solar cells

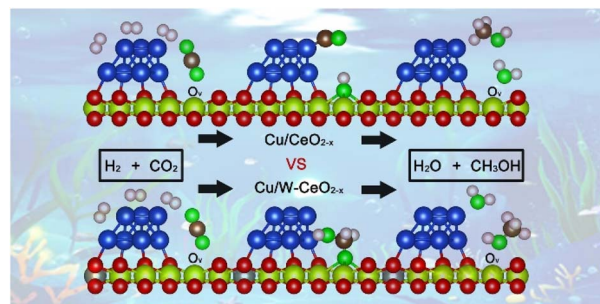
Zhen He, Jian Xiong,* Yongsong Zhang, Fu Liu, Naihe Liu, Junqian Dai, Yongchao Liang, Zheling Zhang, Dongjie Wang, Yu Huang, Qiaogan Liao, Jiang Wang* and Jian Zhang*



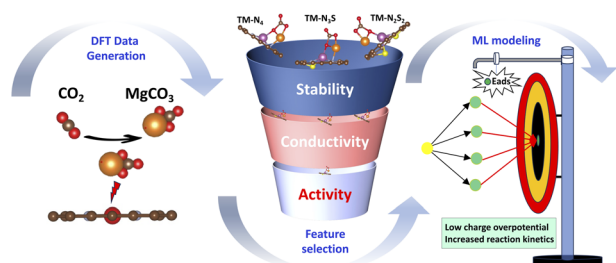
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Mechanism of methanol synthesis from CO_2 on Cu/CeO₂ and Cu/W-CeO₂: a DFT investigation into the nature of W-doping

Nana Ma,* Weiyi Cheng, Changgeng Wei, Shujun Li and Guisheng Zhang*



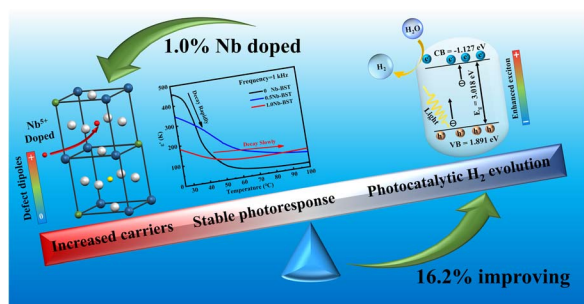
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Unraveling the effect of single atom catalysts on the charging behavior of nonaqueous Mg–CO₂ batteries: a combined density functional theory and machine learning approach

Rafiuzzaman Pritom, Rahul Jayan and Md Mahbubul Islam*

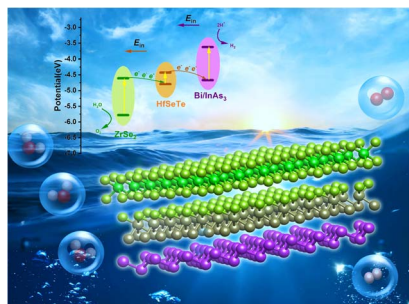
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Defect dipoles and stable dielectric properties improve Nb-doped Ba_{0.7}Sr_{0.3}TiO₃ photocatalytic H₂ evolution activity

Kefan Liu, Zhaoyu Wang, Guanqi Wang, Xinyi Zhang, Ping He, Yuhui Huang, Zijian Hong* and Haiwang Wang*

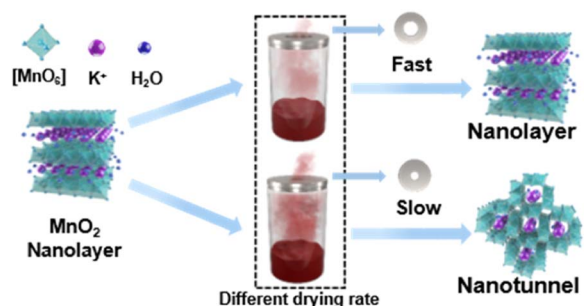
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Two-dimensional trilayer heterostructures with cascade dual Z-schemes to achieve efficient hydrogen evolution reaction

Xue-Qing Wan, Chuan-Lu Yang,* Xiao-Hu Li, Yu-Liang Liu and Wen-Kai Zhao

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The directional structure transition of MnO₂ during the drying process

Kailun Wang, Qin Cheng, Jia-qi Bai, Fang Chen, Jingshuai Chen,* Mingyuan Wu, Song Sun and Chang-Jie Mao

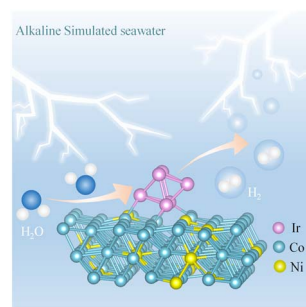


PAPERS

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Enhanced electrocatalytic hydrogen evolution in alkaline saline electrolyte by NiCo foam supported iridium nanoclusters

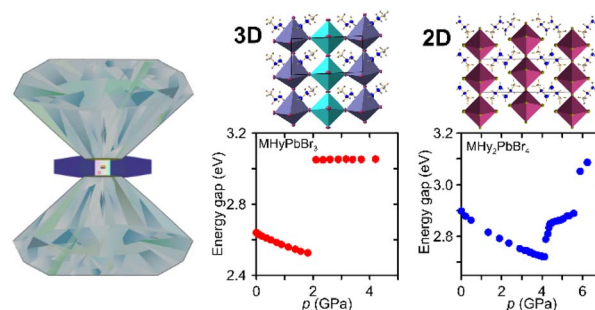
Jiaxin Yuan, Jinsong Zhou, Zehua Peng, Gang Li, Yang Hou and Michael K. H. Leung*



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Structural and optical properties of methylhydrazinium lead bromide perovskites under pressure

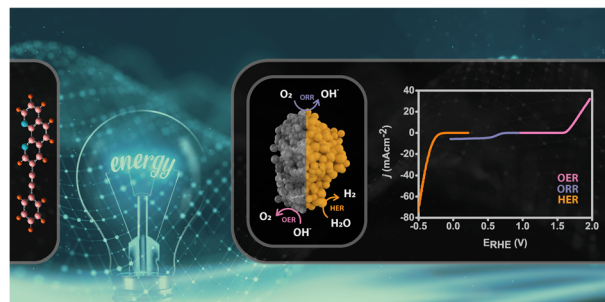
Marek Szafranski*



2400

Exploration of cobalt(III) modification in a phenanthroline-based conjugated organic polymer towards trifunctional electrocatalysis

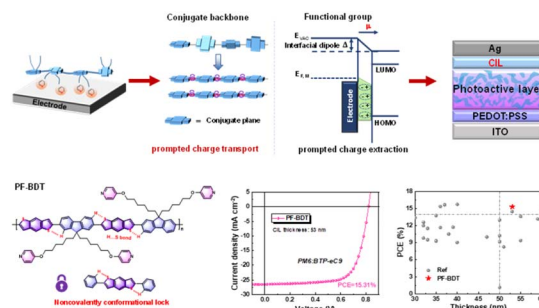
Sugandha Singh, Manas K. Ghorai* and Kamal K. Kar*



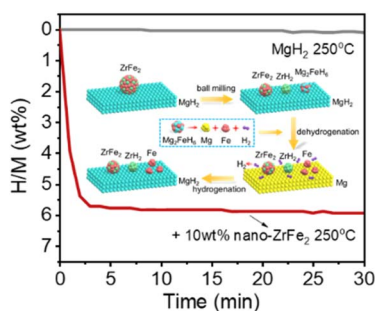
2413

Designing thickness-insensitive cathode interlayers via constructing noncovalently conformational locks for highly efficient non-fullerene organic solar cells

Haolan Zheng, Lin Hu,* Xiaotian Hu,* Hongxiang Li, Jianwei Quan, Yingzhi Jin, Xinxing Yin, Jiaying Song, Zhen Su, Dan Zhou* and Zaifang Li*



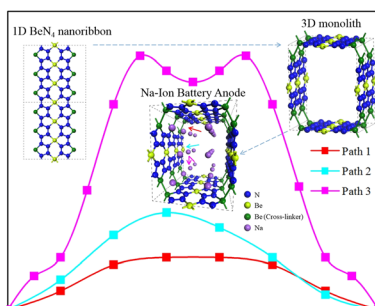
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In situ creation of a catalytic multiphase and multiscale surroundings for remarkable hydrogen storage performance of MgH_2

Lingchao Zhang, Xin Zhang, Wenxuan Zhang, Fang Fang,^{*} Juan Li, Jianjiang Hu, Changdong Gu, Wenping Sun, Mingxia Gao, Hongge Pan^{*} and Yongfeng Liu^{*}

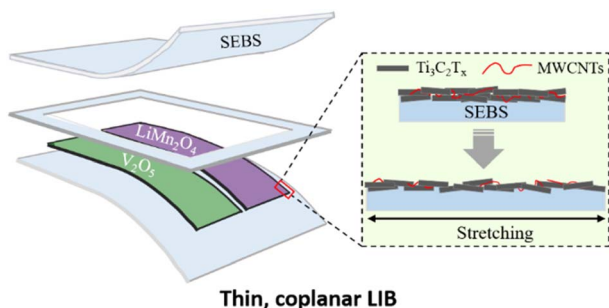
2435



BeN_4 nanoribbon-based 3D porous metallic and ductile monolith for high-performance sodium-ion battery anode

Wei Sun and Qian Wang^{*}

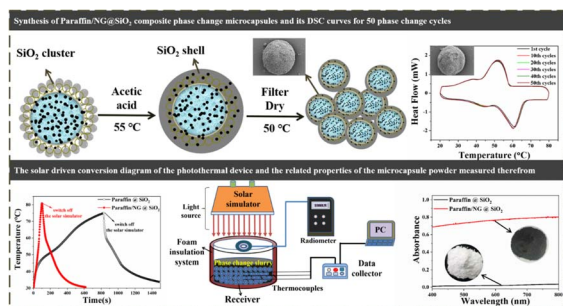
2444



A thin, intrinsically stretchable MXene-MWCNTs/polymer current collector for deformable aqueous Li-ion batteries

Zi-Fang Chen, Xingguang Chen, Chengwei Chen, Xiaoxu Lai, Jian Qin, Chi Chen^{*} and Dan Sun^{*}

2456



Efficient thermal energy conversion and storage enabled by hybrid graphite nanoparticles/silica-encapsulated phase-change microcapsules

Kunjie Yuan,^{*} Qiuyang Chen, Aijia Zhang, Nan Xiao, Xuelin Zou^{*} and Zhiquan Lin^{*}

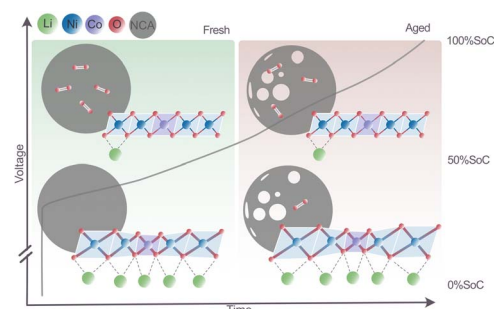


PAPERS

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The role of oxygen in automotive grade lithium-ion battery cathodes: an atomistic survey of ageing

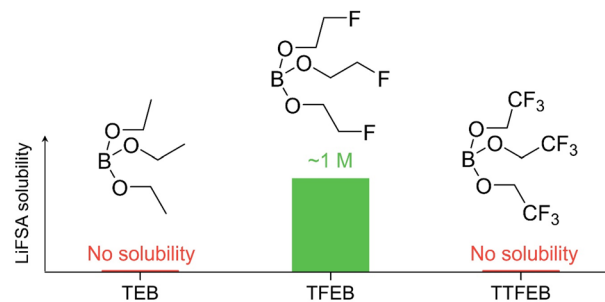
Anastasiia Mikheenkova, Soham Mukherjee, Moritz Hirsbrunner, Pontus Törnblom, Cheuk-Wai Tai, Carlo U. Segre, Yujia Ding, Wenliang Zhang, Teguh Citra Asmara, Yuan Wei, Thorsten Schmitt, Håkan Rensmo, Laurent Duda and Maria Hahlin*



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Fluorination promotes lithium salt dissolution in borate esters for lithium metal batteries

Peiyuan Ma, Ritesh Kumar, Minh Canh Vu, Ke-Hsin Wang, Priyadarshini Mirmira and Chibueze V. Amanchukwu*



2491

Electronic modulation of iridium single atomic sites on NiCr layered double hydroxide for an improved electrocatalytic oxygen evolution reaction

Swayamprakash Biswal, Divya, Biswajit Mishra, Darius Pohl, Bernd Rellinghaus, Dibyajyoti Ghosh* and Bijay P. Tripathi*

