

Journal of Materials Chemistry A

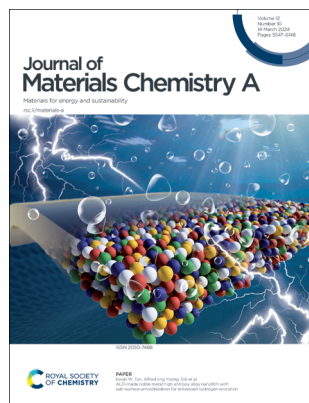
Materials for energy and sustainability

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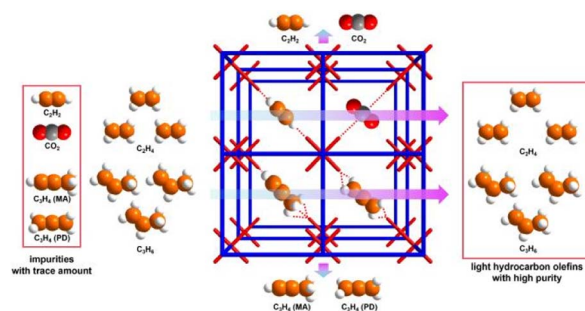
See Kwan W. Tan, Alfred ling Yoong Tok et al., pp. 5668–5678. Image reproduced by permission of Kwan W. Tan from *J. Mater. Chem. A*, 2024, 12, 5668.

REVIEWS

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Recent advances on metal–organic frameworks for deep purification of olefins

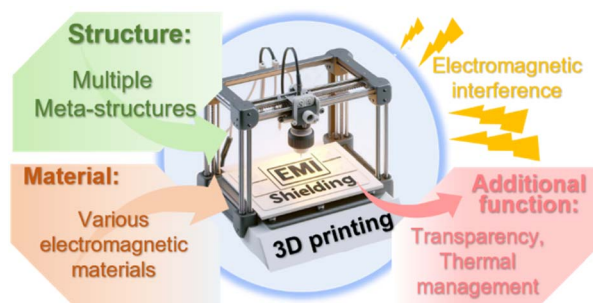
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Advancements in 3D-printed architectures for electromagnetic interference shields

Guanhua Zhang,* Haipeng Wang, Wei Xie, Siyuan Zhou,
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Fundamental questions
Elemental answers

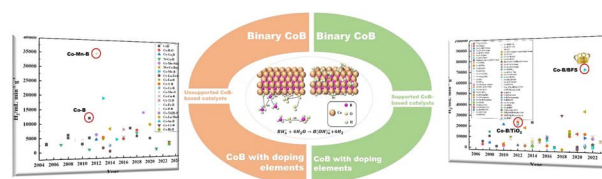


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The mechanism and challenges of cobalt-boron-based catalysts in the hydrolysis of sodium borohydride

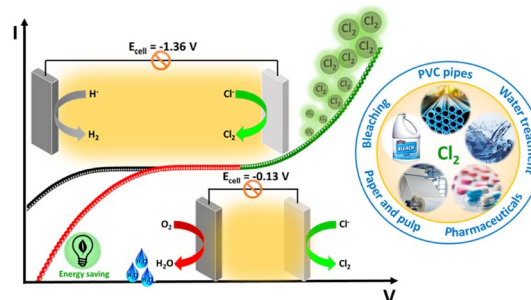
Bo Long, Jia Chen, Swellam W Sharshir, Lawa Ibrahim, Weiming Zhou,* Chong Wang,* Liwei Wang* and Zhanhui Yuan*



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Recent advances in energy-efficient chlorine production via HCl electrolysis

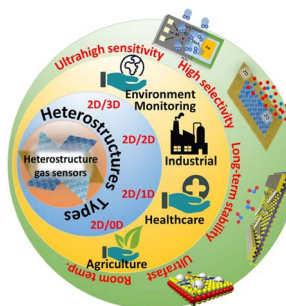
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Mixed-dimensional van der Waals heterostructure enabled gas sensors: fundamentals and applications

Neeraj Goel, Utkarsha, Aditya Kushwaha, Monika Kwoka, Rahul Kumar and Mahesh Kumar*

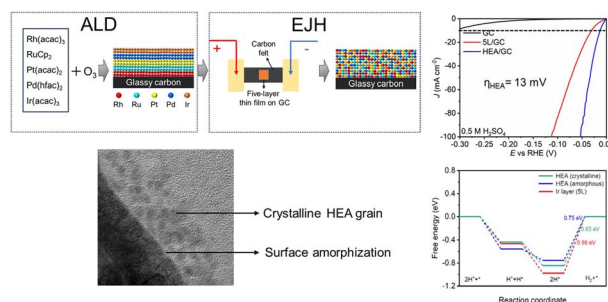


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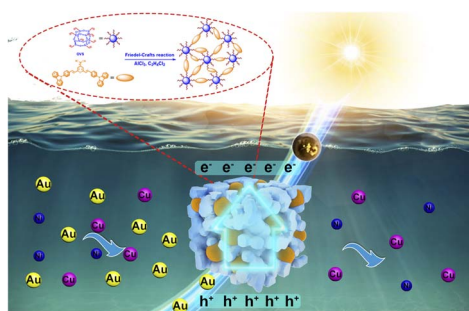
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ALD-made noble metal high entropy alloy nanofilm with sub-surface amorphization for enhanced hydrogen evolution

Yiming Zou, Lin Jing, Jianghong Zhang, Songzhu Luo, Leyan Wang, Yun Li, Ronn Goei, Kwan W. Tan* and Alfred ling Yoong Tok*



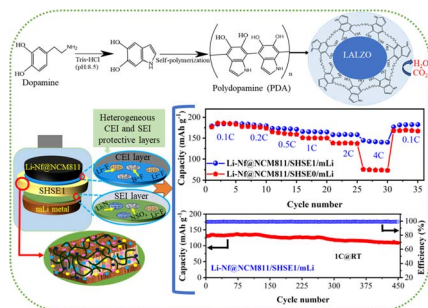
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Ultrafast and highly selective gold recovery with high capture capacity from electronic waste by upconversion of a silsesquioxane-based hybrid luminescent aerogel

Qingzheng Wang, Masafumi Unno* and Hongzhi Liu*

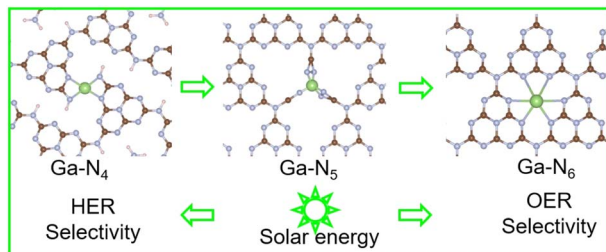
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Improved electrochemical performance of solid-state lithium metal batteries with stable SEI and CEI layers *via in situ* formation technique

Tadesu Hailu Mengesha, Shimelis Lemma Beshahwured, Yola Bertilsya Hendri, Kumlachew Zelalem Walle, Yi-Shiuan Wu and Chun-Chen Yang*

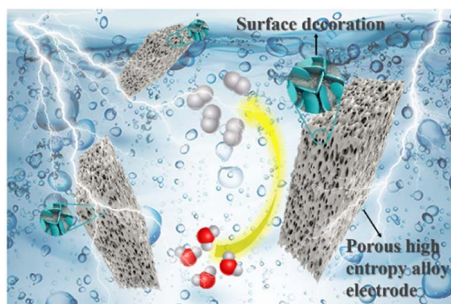
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Coordination environment dominated catalytic selectivity of photocatalytic hydrogen and oxygen reduction over switchable gallium and nitrogen active sites

Chunqiang Zhuang, Weiming Li, Yuan Chang, Shijie Li,* Yihong Zhang, Yuanli Li, Junfeng Gao,* Ge Chen and Zhenhui Kang*

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Surface decoration on self-supporting high entropy alloy electrodes for enhanced electrochemical water splitting

Runtong Zhou, Xiao Han,* Qiao Chen, Luwei Peng, Xueyuan Qiu, Pan Wang, Chang Guo, Jincheng Wang, Zhijun Wang and Jianhua Hao*

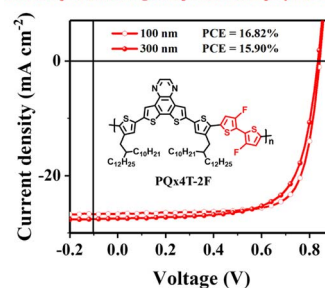


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Dithienoquinoxaline-quaterthiophene wide bandgap donor polymers with strong interchain aggregation for efficient organic solar cells processed with a non-halogenated solvent

Xinkang Wang, Zesheng Zhang, Lingchen Kong, Mei Luo, Mingqing Chen, Lianjie Zhang and Junwu Chen*

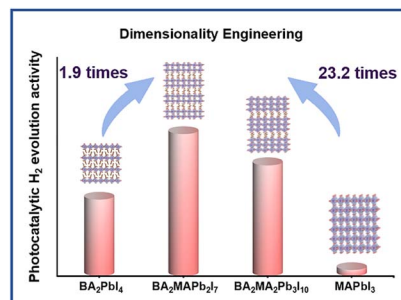
Toluene-processed oligothiophene based polymer donor



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Tuning the dimensionality of organic–inorganic hybrid perovskites towards improved photocatalytic hydrogen production

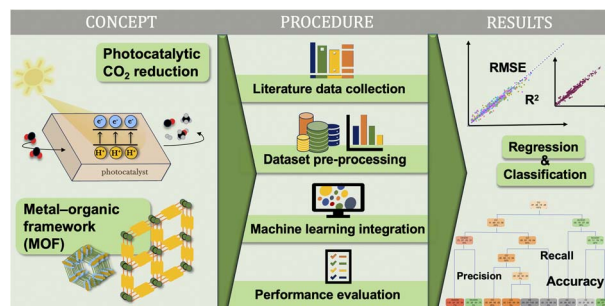
Jiaqi Liu, Hefeng Zhang, Junhui Wang and Xu Zong*



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Analysis of photocatalytic CO₂ reduction over MOFs using machine learning

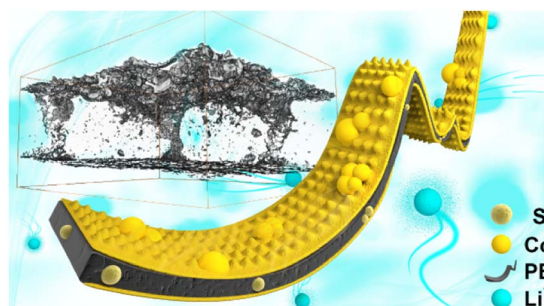
Simay Özsoysal, Burcu Oral and Ramazan Yıldırım*



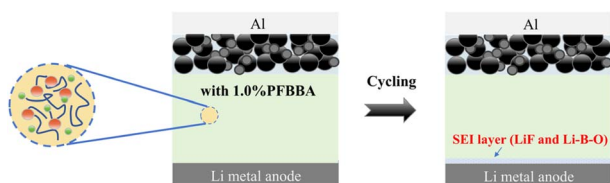
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Cobalt-based current collectors for flexible electrodes and their application in lithium–sulfur batteries

Ying Yu,* Zhenkai Tang, Yuxiao Wang, Hongzhang Zhang, Huamin Zhang and Xianfeng Li



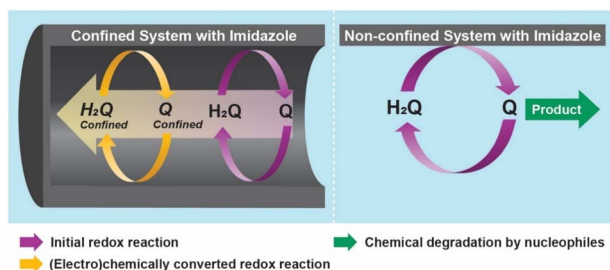
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Pentafluorobenzene boronic acid with strong Lewis acidity for the modification of PEO-based polymer electrolytes

Liwei Su,* Yijuan Zhu, Xingyi Zhan, Kang Yu, Tianyu Guo, Ke Gu, Hao Wu, Lianbang Wang,* Yuanhao Wang* and Xiaoxiang Wang

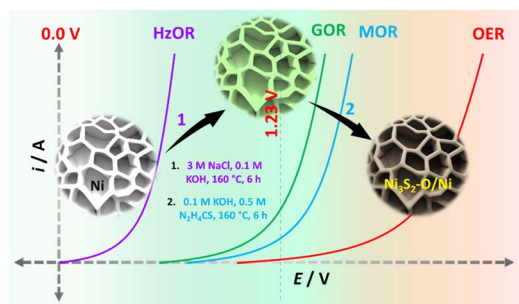
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Redox-driven confinement of quinone with imidazole in sub-nanometer sized porous carbon space mitigating chemical degradation for aqueous energy storage

Jeehae Yang, Anseong Park, Taesung Kwon, Yongkyu Lee, Won Bo Lee, Ki Min Nam,* Yongjoo Kim* and Jinho Chang*

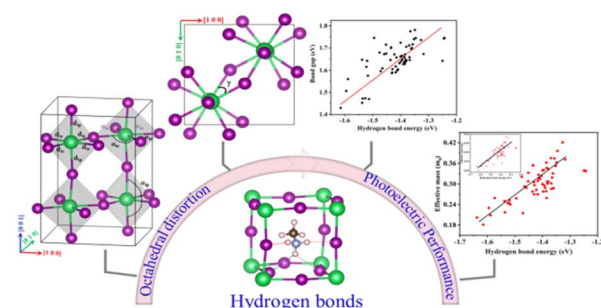
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Prior oxidation of Ni substrates increases the number of active sites in Ni_3S_2 obtained by sulfidation and enhances its multifunctional electrocatalytic activity

Anantharaj Sengeni* and Suguru Noda

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Hydrogen bonds delicately restraining photoelectric performance in hybrid perovskites

Shengjian Qin, Yanglei Liu, Rui Li, Yinan Jiao, Hengbin Chen and Jinjin Zhao*

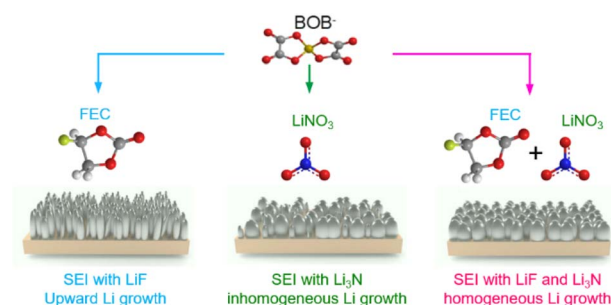


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Revealing the synergistic effect of LiF and Li₃N in solid electrolyte interphases for stable lithium metal batteries using *in situ* electrochemical atomic force microscopy

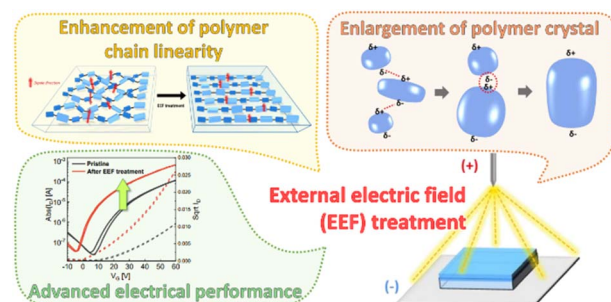
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External electric field treatment for improving the morphology and electrical performance of P(NDI2OD-T2)

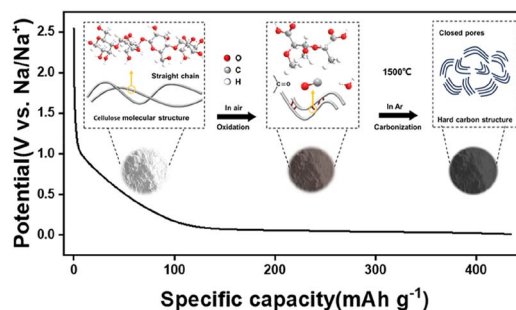
Yina Moon, Yunseul Kim, Dongseong Yang, Nara Han, Minwoo Lee, Younghyo Kim, Il-Young Jo, Myung-Han Yoon and Dong-Yu Kim*



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Regulating oxygen functionalities of cellulose-derived hard carbon toward superior sodium storage

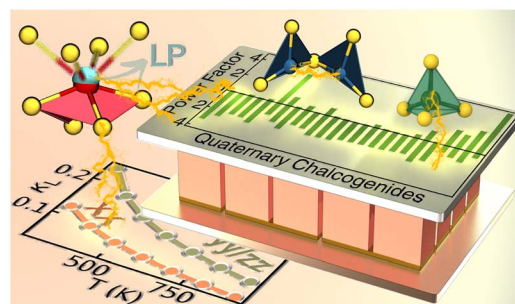
Boyang Zhao, Xiaotian Li, Lei Shang, Chuang Qiu, Renlu Yuan, Haiyan Liu, Tao Liu, Ang Li, Xiaohong Chen and Huaihe Song*



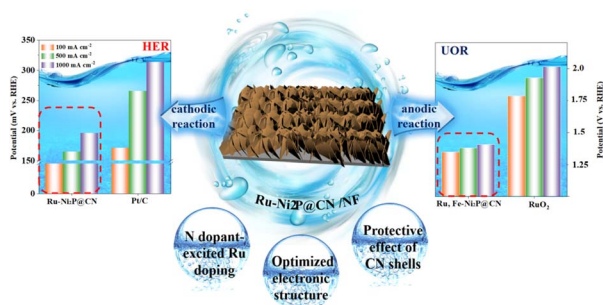
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Unlocking the potential of coinage-based quaternary chalcogenides for thermoelectricity

Mahsa Gholami, Zahra Hajiahmadi and S. Shahab Naghavi*



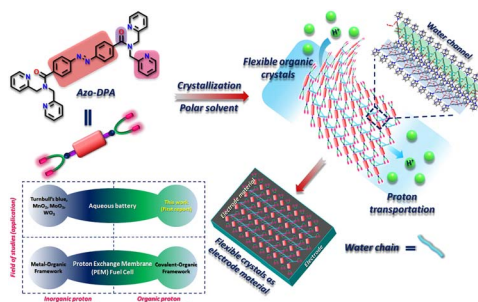
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Ru dopants induced tensile strain in Ni_2P for efficient urea-assisted water decomposition at an amper-level current density

Mengmeng Wang, Yunmei Du,^{*} Shuangshuang Li, Yuanxiang Gu and Lei Wang^{*}

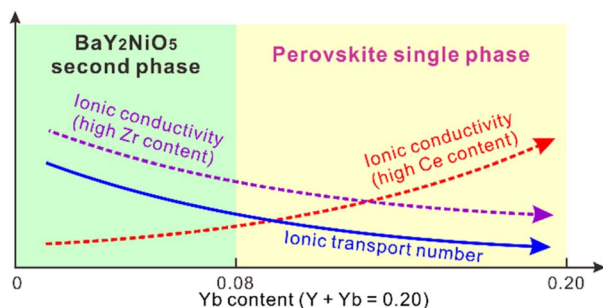
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Water-chain mediated proton conductivity in mechanically flexible redox-active organic single crystals

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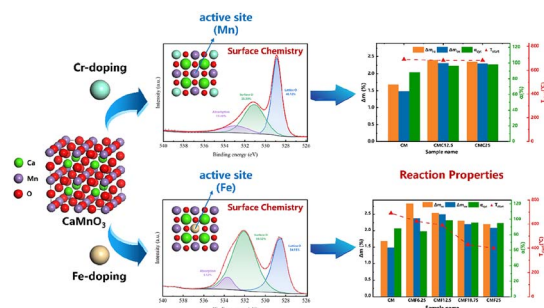
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Transport properties of the $\text{Ba}(\text{Zr,Ce,Y,Yb})\text{O}_{3-\delta}$ proton conductor: the real role of co-substitution of Y and Yb

Hui Guo, Yifeng Li, Lulu Jiang, Yanan Sha, Shihang Guo and Donglin Han^{*}

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Understanding the modulation mechanism of B-site doping on the thermochemical properties of $\text{CaMnO}_{3-\delta}$: an experimental and computational study

Zeyu Ning, Shengchi Gan, Haoran Xu, Changdong Gu, Peiwan Zhu, Jinsong Zhou^{*} and Gang Xiao^{*}

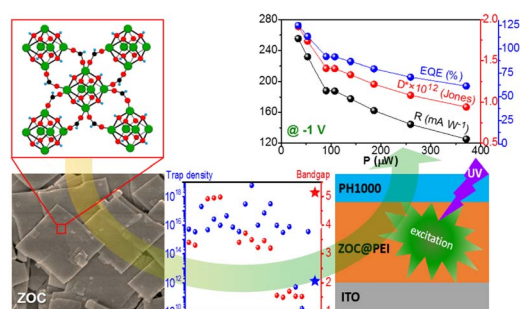


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Self-assembled metal-oxo clusters for sensitive and low-powered ultraviolet photodetectors

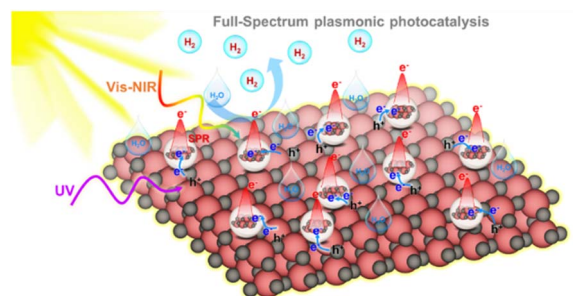
Manh Hoang Tran, Thi My Huyen Nguyen and Chung Wung Bark*



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Constructing plasmonic electron acceptors on TiO₂ for full-spectrum-driven photocatalytic hydrogen generation

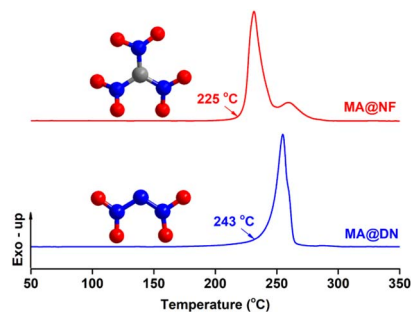
Changhai Lu, Xiaoyan Cai, Xiaolei Liu, Dehua Tian, Baojun Li, Juan Li* and Zaizhu Lou*



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Highly stable poly-nitro components achieved through supramolecular encapsulation

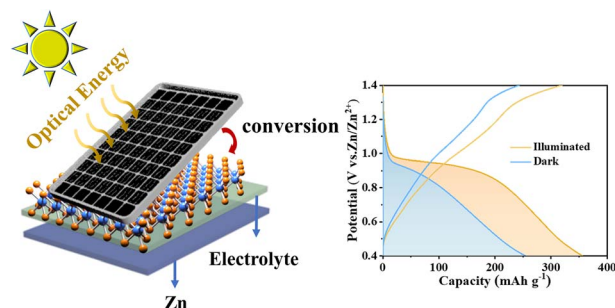
Jichuan Zhang, Jinhao Zhang, Jatinder Singh, Wanbao Wu, Richard J. Staples, Jiaheng Zhang* and Jean'ne M. Shreeve*



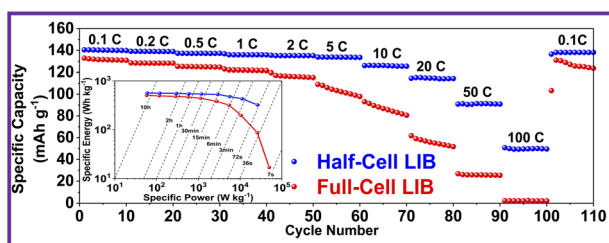
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Design of a light-sensitive tubular MoS₂/C composite as the cathode for photo-enhanced rechargeable zinc-ion batteries

Mengjue Cao, Duoying Wang, Yi Feng, Xiaoli Gu and Jianfeng Yao*



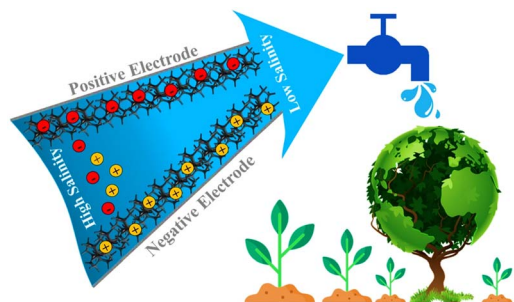
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Chlorine-assisted synthesis of Mn-deficient LiMn_2O_4 spinel with ultra-high-rate capability and long-term cyclability in half and full Li ion cells

F. Luna-Lama, L. Barbosa, A. Y. Tesio, A. Caballero and J. Morales*

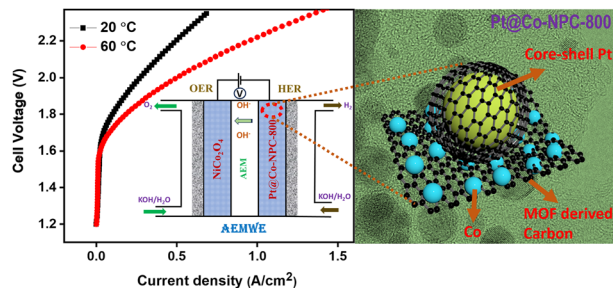
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A 3D binder-free rGO/NiMnCo nanosheet for highly efficient hybrid supercapacitors and ion-selective capacitive deionization

Ehsan Delfani, Sajjad Habibzadeh,* Morvarid Pourdayan, Leila Naji and Mohammad Reza Ganjali

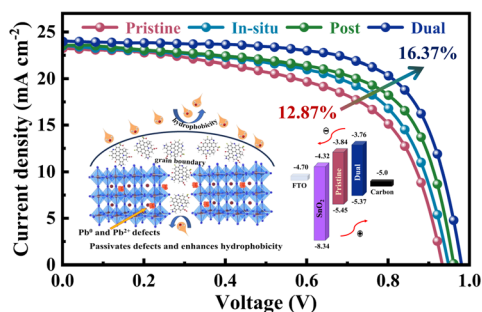
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Carbon core-shell Pt nanoparticle embedded porphyrin Co-MOF derived N-doped porous carbon for the alkaline AEM water electrolyzer application

Mohan Raj Subramaniam, Shanmugam Ramakrishnan, Saleem Sidra, S. C. Karthikeyan, Subramanian Vijayapradeep, Jian Huang, Mohamed Mamlouk, Do Hwan Kim and Dong Jin Yoo*

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A dual passivation strategy based on F/N co-doped coal-based graphene quantum dots for high-efficiency carbon-based perovskite solar cells

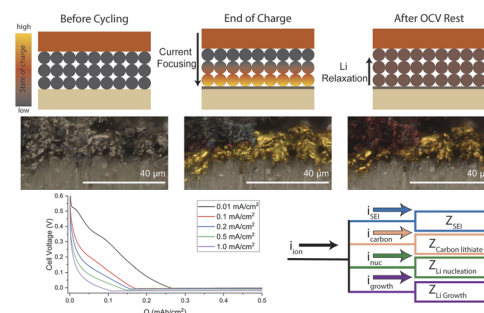
Qixu Hu, Ke Zhao, Min Liu, Salman Riaz, Ying Qi, Peng Wei, Jian Cheng and Yahong Xie*



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Interfacial dynamics of carbon interlayers in anode-free solid-state batteries

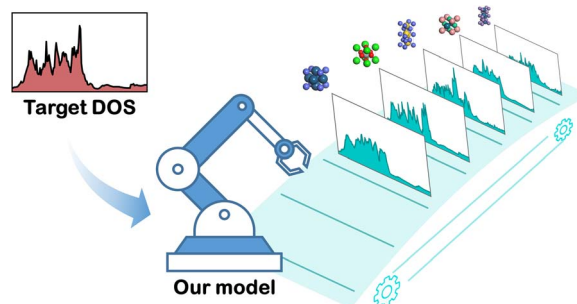
Daniel W. Liao, Tae H. Cho, Shaurya Sarna, Manoj K. Jangid, Hiroki Kawakami, Toshikazu Kotaka, Koichiro Aotani and Neil P. Dasgupta*



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Inverse design for materials discovery from the multidimensional electronic density of states

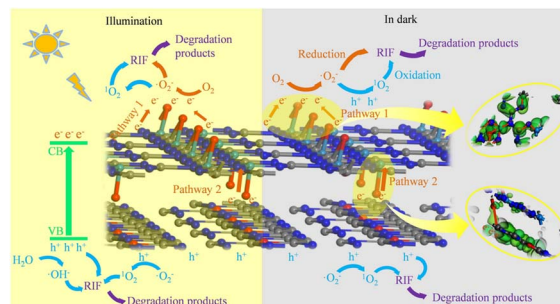
Kihoon Bang, Jeongrae Kim, Doosun Hong, Donghun Kim* and Sang Soo Han*



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Insight into the rapid degradation of antibiotic rifampicin by W-doped O-bridged g-C₃N₄ via the coupling effect of electron replenishment in the dark degradation stage and electrophilic attack in the photocatalytic stage: experiments and DFT simulation calculations

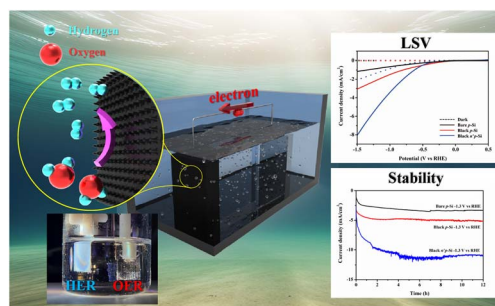
Panpan Li, Jingde Luan,* Longde Jiang, Yu Zhang, Wengang Liu, Zheng Yan and Xin Ke



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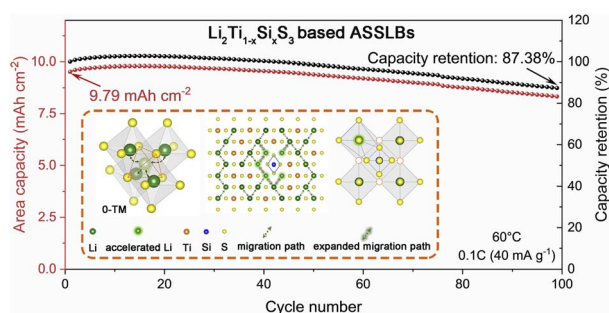
Advanced nanostructuring and gradient phosphorus doping enhance p-Si photocathode performance for photoelectrochemical water splitting

Dong Hyeok Seo, Kee-Ryung Park and Woo-Byoung Kim*



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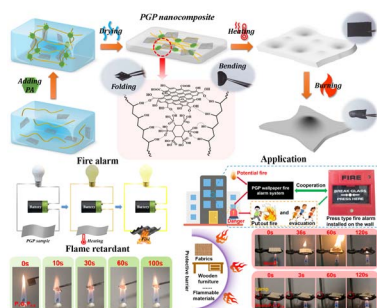
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Lithium-rich sulfide $\text{Li}_2\text{Ti}_{1-x}\text{Si}_x\text{S}_3$ cathode materials optimized through Si-doping for high-capacity all-solid-state lithium-ion batteries

Yaqi Hu, Zongliang Zhang, Siliang Liu, Fangbo He, Yang Liu, Zhi Zhuang and Fangyang Liu*

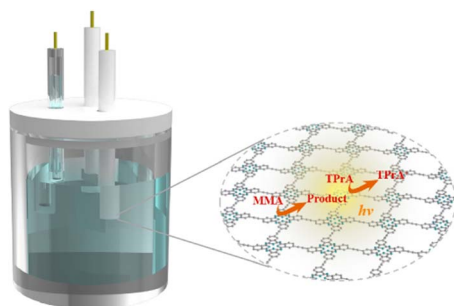
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A flame retardant poly(vinyl alcohol)/graphene oxide/phytic acid composite for a quick response and ultra-long fire alarm

Zhihao Zhang, Zhenzhu Zhou, Junchao Huang* and Yuhua Wang*

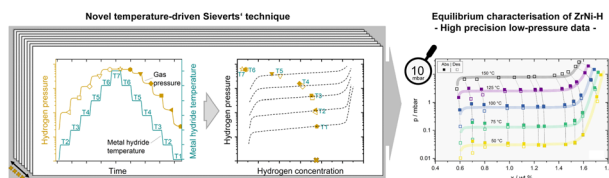
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Ultrathin alkynylation phthalocyanine-conjugated organic polymer nanosheets for constructing a sensitive electrochemiluminescence sensor

Tianyou Chen, Yufei Wang, Yu Gu, Fan Wen, Jing Wu* and Hong Shang*

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Thermodynamic characterisation and application of the ZrNi–H metal hydride system in the low-pressure regime

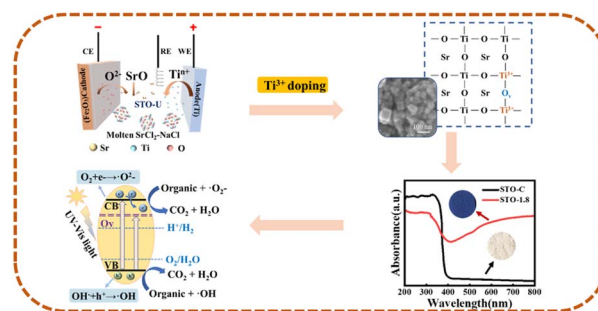
Jonina Felbinger*, Johanna Haverich, Inga Bürger and Marc Linder



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Ultra-fast synthesis of the high performance photocatalytic Ti^{3+} self-doped strontium titanate by an electrochemical assist in molten salt: effect of electrochemical potential

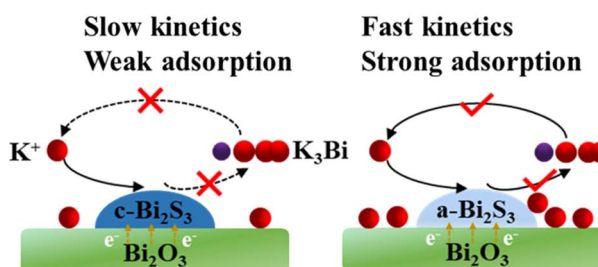
Yuhan Wang, Xinyue Liu, Kai Yu, Zhiqiang Ning,*
Qiushi Song and Hongwei Xie*



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Construction of Bi-based amorphous/crystalline heterostructures for efficient potassium ion storage

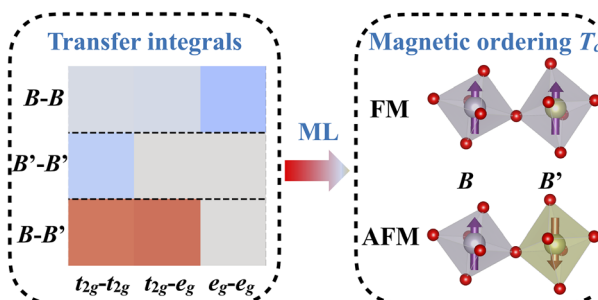
Hankun Yang, Xiaoqing Zhang, Wei Li, Yufang Chen,*
Xiaolei Tang, Ying Wu, Qiliang Wei,* Xianyou Wang
and Hongbo Shu*



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Machine learning facilitated by microscopic features for discovery of novel magnetic double perovskites

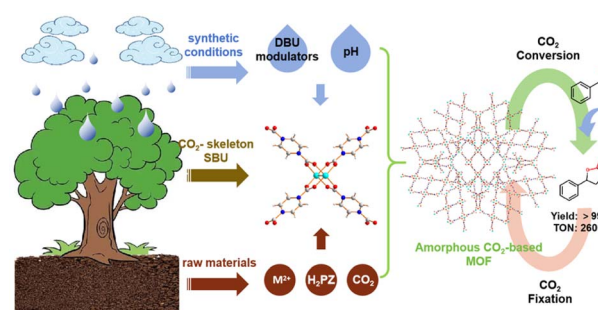
Shuping Guo,* Ryan Morrow, Jeroen van den Brink
and Oleg Janson*



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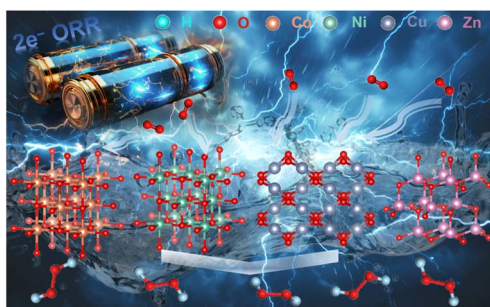
CO_2 -generated amorphous metal organic frameworks for efficient CO_2 conversion

Zhou Fang, Yue Hu, Bing Yao, Zhizhen Ye
and Xinsheng Peng*



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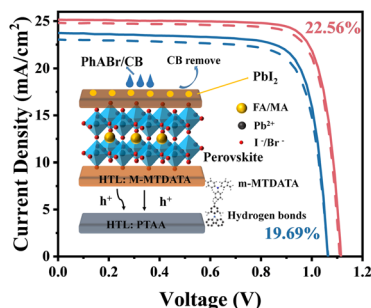
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High-efficiency oxygen reduction by late transition metal oxides to produce H₂O₂

Yue Zhang, Hao Jiang, Chengxu Zhang,^{*} Yuebin Feng, Hang Feng, Sanyuan Zhu and Jue Hu^{*}

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Comprehensive interface engineering based on target anchoring agents for efficient and stable inverted perovskite solar cells

Pengpeng Dong, Bitao Chen, Disheng Yao,^{*} Songbo Li, Jiale Su, Bing Zhou, Nan Tian, Guoyuan Zheng, Yong Peng and Fei Long^{*}

RETRACTION

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Retraction: Novel ethynyl-pyrene substituted phenothiazine based metal free organic dyes in DSSC with 12% conversion efficiency

Bhanumathi Nagarajan, Suman Kushwaha, Ramachandran Elumalai, Sudip Mandal, Kothandaraman Ramanujam^{*} and Dhamodharan Raghavachari^{*}

