

# Journal of Materials Chemistry A

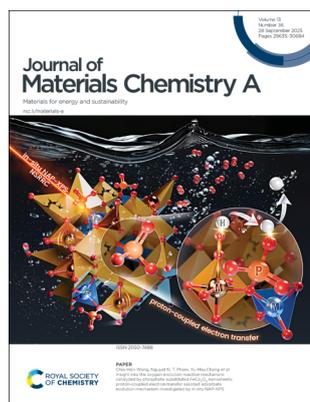
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## IN THIS ISSUE

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**Cover**  
See Chia-Hsin Wang, Nguyet N. T. Pham, Yu-Hsu Chang *et al.*, pp. 29900–29910. Image reproduced by permission of Yu-Hsu Chang from *J. Mater. Chem. A*, 2025, 13, 29900.



**Inside cover**  
See Mohsin Saleem, Sofia Javed, Muhammad Zubair Khan, Jung-Hyuk Koh *et al.*, pp. 29911–29929. Image reproduced by permission of Mohsin Saleem and Jung-Hyuk Koh from *J. Mater. Chem. A*, 2025, 13, 29911.

## EDITORIAL

29659

### Molecular photoswitches for energy storage

Rachel Evans, Grace Han, Tao Li and Hermann A. Wegner



Rachel Evans

Grace Han

Tao Li

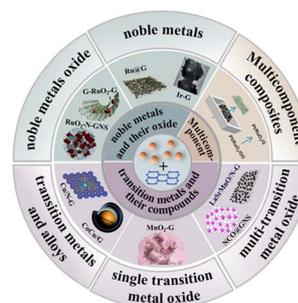
Hermann Wegner

## REVIEWS

29661

### Metal/metal oxide–graphene nanocomposites as cathode catalysts for lithium–oxygen batteries

Heyu Xiao, Zhiwei Yu, Yuecheng Xiong, Yunhao Wang, Fengkun Hao, Xichen Zhou, Jingwen Zhou,\* Qisheng Fang, Jianli Cheng\* and Bin Wang\*



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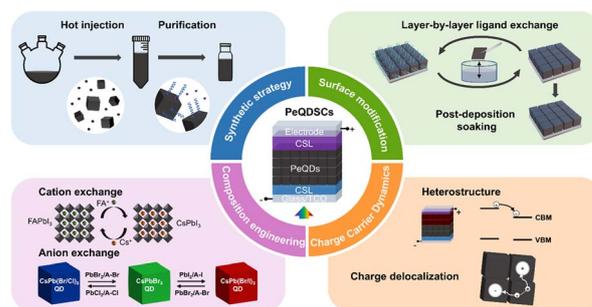
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## REVIEWS

29688

## Advancing the synthesis strategy and interface modification for efficient perovskite quantum dot solar cells

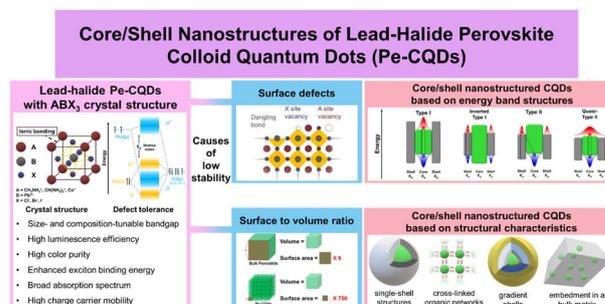
Yuanze Xu, Xiaoyu Zhang, Chenwei Zhu and Qiuming Yu\*



29706

## A comprehensive review of core/shell nanostructures of lead-halide perovskite quantum dots for improved optoelectronic performance and stability

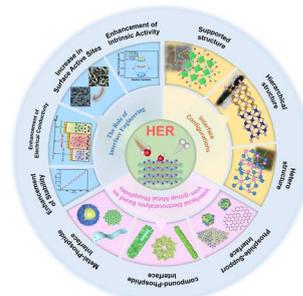
Jae Woo Kim, Jigeon Kim, Ju Young Woo\* and Younghoon Kim\*



29736

## Recent advances in interface engineering of iron triad metal phosphide electrocatalysts towards enhanced hydrogen evolution reaction performance

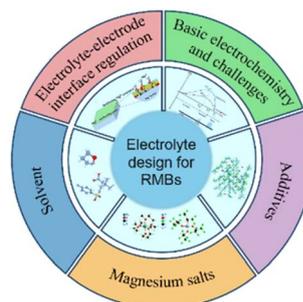
Jing Zhang, Menglei Sun, Hanyu Guo, Zhiliang Wang, Jiarun Cheng, Chaojie Lyu\* and Yiming Liu\*



29776

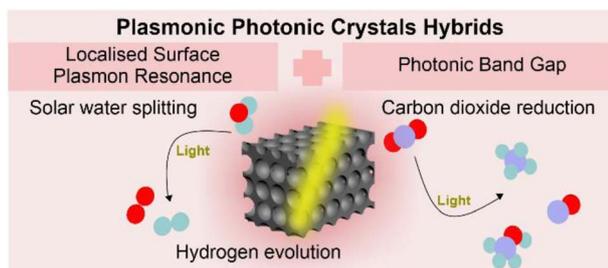
## Electrolyte challenges and strategies toward better rechargeable magnesium-metal batteries

Yuanxiang Zhang, Tianlong Huang, Mengting Yuan, Maosheng Cui, Zhen Mu, Yang Zhang and Xiaolan Xue\*



## REVIEWS

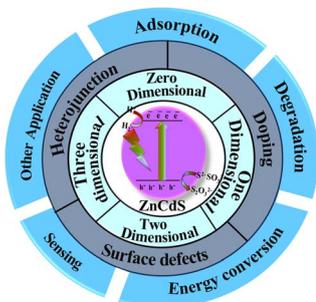
29806



### Architecting light for catalysis: emerging frontiers in plasmonic–photonic crystal hybrids for solar energy conversion

Tharishinny Raja Mogan\* and Hiang Kwee Lee\*

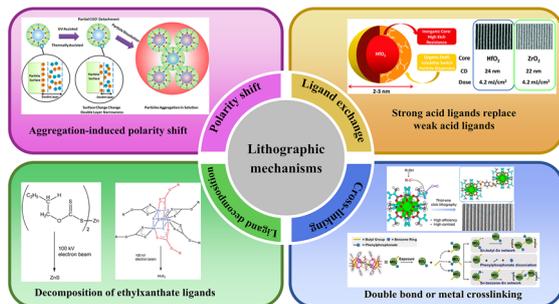
29833



### Tuning ZnCdS heterostructures for enhanced photocatalysis: hybrid architectures for sustainable energy and environmental applications

Shabnam Sambyal, Pankaj Raizada, Akshay Chawla, Aftab Aslam Parwaz Khan, Sourbh Thakur, Van-Huy Nguyen\* and Pardeep Singh\*

29860

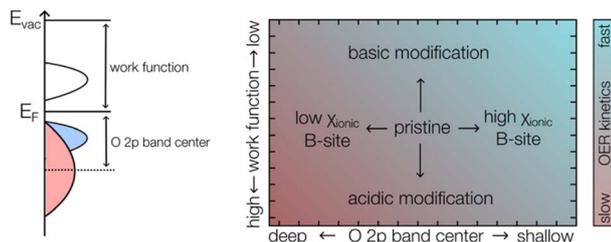


### Advances in metal-based photoresist materials for EUV lithography and lithographic mechanisms

Yalong Wang, Haojie Yu,\* Li Wang,\* Yanhui Zhang, Zheyi Zhu, Ying Zhang, Yuguang Lu and Chenguang Ouyang

## PERSPECTIVE

29885



### Reducibility, adsorption energies, surface acidity – fundamental material properties for fast oxygen exchange

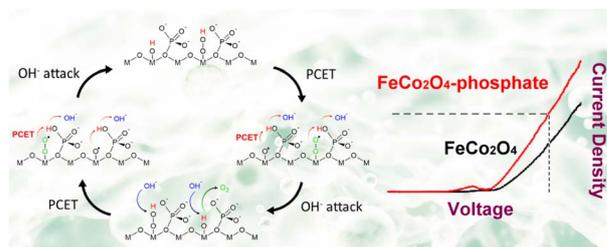
Matthäus Siebenhofer,\* Filip Grajkowski, Clément Nicollet, Bilge Yildiz, Jürgen Fleig and Markus Kubicek



29900

### Insight into the oxygen evolution reaction mechanism catalyzed by phosphate-substituted $\text{FeCo}_2\text{O}_4$ nanosheets: proton-coupled electron transfer assisted adsorbate evolution mechanism investigated by *in situ* NAP-XPS

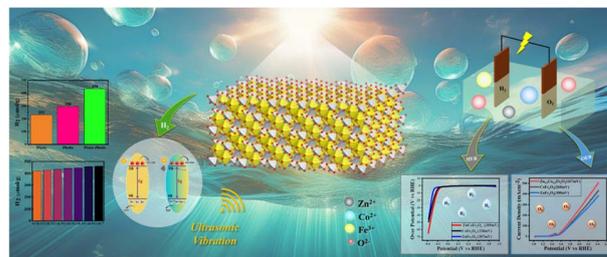
Nut Thanasuwanakul, Chueh-Cheng Yang, Pantita Prapamonton, Chia-Hsin Wang,\* Nguyet N. T. Pham\* and Yu-Hsu Chang\*



29911

### Coupling the power of spinel nanoparticles: dual-function metal ferrite catalysts for advanced piezo-photocatalytic and electrocatalytic water splitting

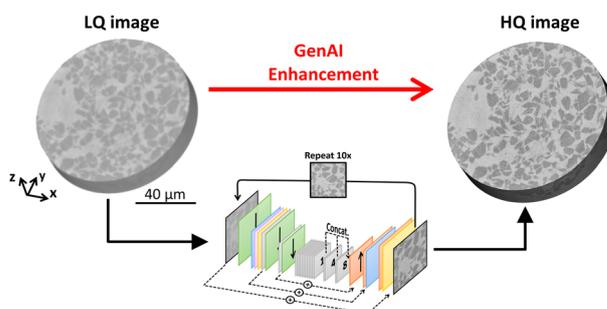
Saima Jabeen, Mohsin Saleem,\* Farah Mumtaz, Sofia Javed,\* Mukarram Ali, Muhammad Zubair Khan,\* Jung-Hyuk Koh,\* Adnan Maqbool, Abrar H. Baluch, Muhammad Bilal Khan Niazi and Iftikhar Hussain



29930

### GenAI-enhanced 4D nano-tomography for advanced battery microstructure analysis

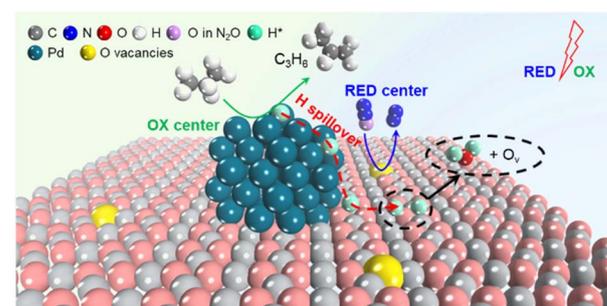
Michael Häusler, Raphael Wilhelmer, Rahulkumar J. Sinojiya, Olga Stamatii, Julie Villanova, Christoph Stangl, Stefan Koller and Roland Brunner\*



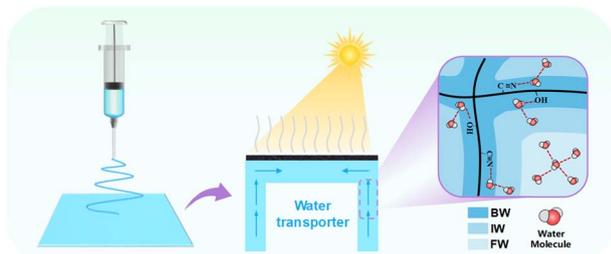
29943

### Insights into the catalytic valorization of industrial high-concentration nitrous oxide for propylene synthesis

Yunshuo Wu, Yuxin Sun, Xuanhao Wu, Haiqiang Wang,\* Lianzhou Wang\* and Zhongbiao Wu\*



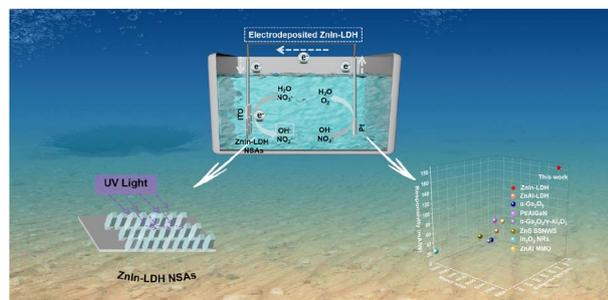
29956



### Optimizing water content for high-performance fabric solar steam generation

Zhihao Liang, Maosong Tian, Jingfu Tian, Junbo Chen and Yuanpeng Xie\*

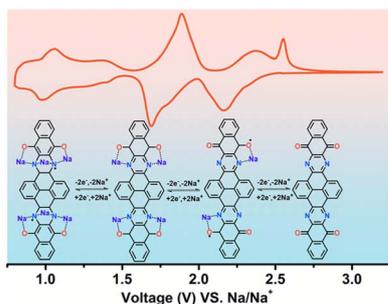
29965



### High-performance underwater weak-light photoelectrochemical photodetection based on ZnIn-LDH nanosheet arrays

Wenhui Li, Yuan Zhang, Junxin Zhou, Xinghan Li, Nana Zhang, Sha Zhao, Zhitao Shao, Jiaming Liu, Guangmei Wu\* and Wei Feng\*

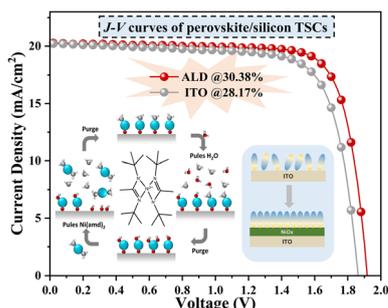
29974



### N-heterocyclic $\pi$ -conjugated quinone cathodes with multiple chelation for robust sodium batteries

Kun Fan,\* Yuan Gu, Xin Kang, Huating Ruan, Lei Chen, Zijun Huang, Jingmei Wu, Yuan Chen, Shantang Liu\* and Chengliang Wang\*

29983



### Hydroxyl-functionalized ultrathin NiO<sub>x</sub> interlayer for minimized energy loss and enhanced interface stability in perovskite photovoltaics

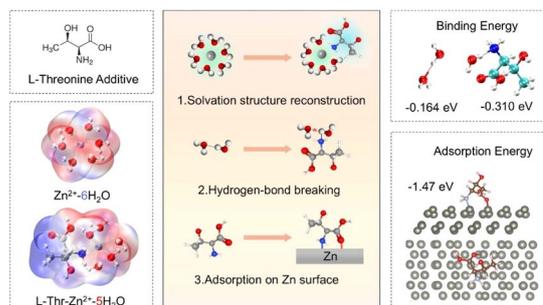
Xiao Jia, Zhen Chang, Kai Wang,\* Jianxun Li, Shulin Wang, Hui Wang, Shiqi Rong, Qingshun Dong, Guozhen Liu, Yao Tong,\* Siyi Liu, Dongdong Li\* and Shengzhong (Frank) Liu\*



29994

### Synergistic solvation-surface engineering for high-performance aqueous zinc metal batteries

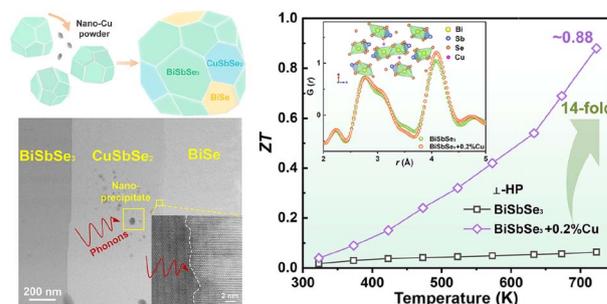
Kuhang Liu, Rui Huo, Dongming Xu,<sup>\*</sup> Chengjun Liu, Lishun Bai, Yue Liu, Ying He, Feiyan Yu, Keli Bu and Zhi Chang<sup>\*</sup>



30006

### Multiphase microstructures enable high-performance BiSbSe<sub>3</sub>/Cu thermoelectric composites

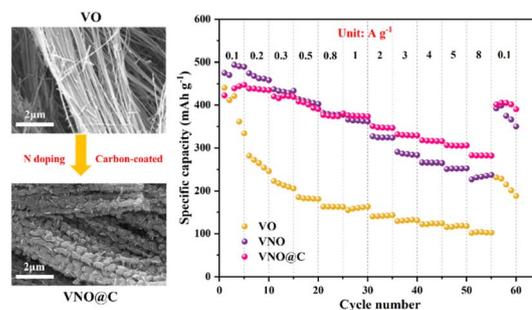
Xiaowei Shi, Saichao Cao, Yu Yan, Quanwei Jiang, Shuyue Tan, Huijun Kang,<sup>\*</sup> Enyu Guo, Zongning Chen, Rongchun Chen<sup>\*</sup> and Tongmin Wang<sup>\*</sup>



30019

### VN<sub>x</sub>O<sub>y</sub>@C nanowires: a high-performance cathode material for aqueous zinc-ion batteries with dual-redox reaction mechanisms

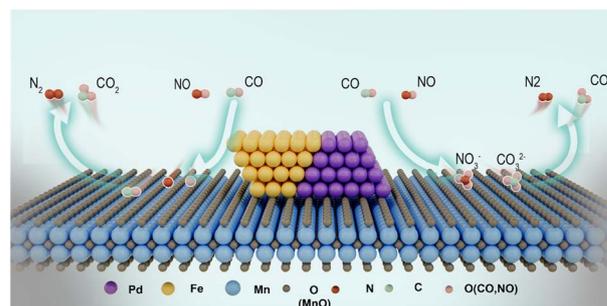
Bin Tang, Yongsheng Xiang, Xinlu Li, Chaohe Xu<sup>\*</sup> and Ronghua Wang<sup>\*</sup>



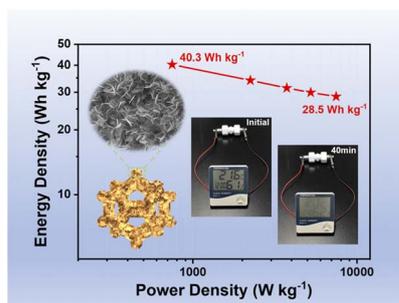
30029

### Fe-induced transformation of OMS-2 to MnO with tailored oxygen vacancies for enhanced CO-SCR performance

Qingwei Li, Kaiting Chen, Xinyu Han, Cheng Rao,<sup>\*</sup> Xiangguang Yang and Yibo Zhang<sup>\*</sup>



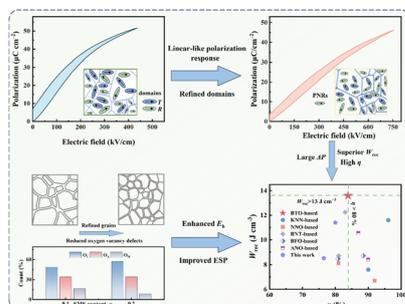
30044



### Oxygen vacancy-enriched NiFe-MOF/Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> MXene composite as a binder-free cathode for high-performance hybrid supercapacitors

Yuting Hu, Jianing Yu, Jingyuan Zhang, Jing Zhang, Zhuo Wang, Jiawei Wang and Bin Zhao\*

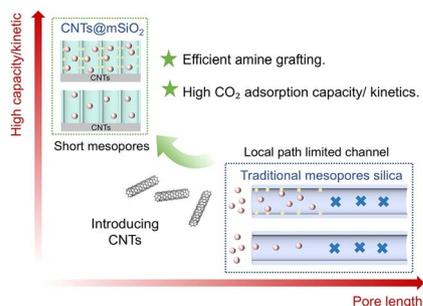
30053



### Synergistically enhanced energy storage performance of Bi<sub>0.47</sub>Na<sub>0.47</sub>Ba<sub>0.06</sub>TiO<sub>3</sub>-based relaxor ferroelectrics via dual engineering of dynamic nanodomains and defect regulation

Jiangping Huang, Liang Deng,\* Yu Zhang, Yue Pan, Xiuli Chen,\* Xu Li\* and Huanfu Zhou

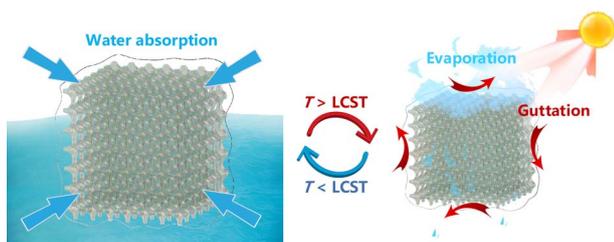
30065



### Amine-functionalized CNTs@mSiO<sub>2</sub> with short radical mesochannels for fast and efficient CO<sub>2</sub> capture

Liju Bai, Xiaotong Jiang, Yimin Deng, Shuai Wang and Helei Liu\*

30073



### A bio-inspired thermo-responsive hydrogel purifier for effective water harvesting in seawater

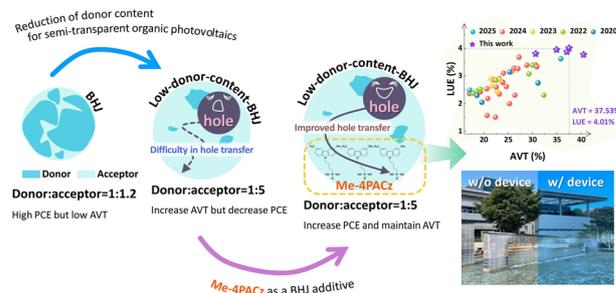
Yang Xiao, Yanqiong Bao, Lang Liu, Wanlin Xu, Da Li, Xiong Zheng,\* Guangzhao Qin and Qing Li



30084

## Achieving excellent charge balance and transport in low-donor bulk heterojunctions for high-performance semitransparent organic photovoltaics

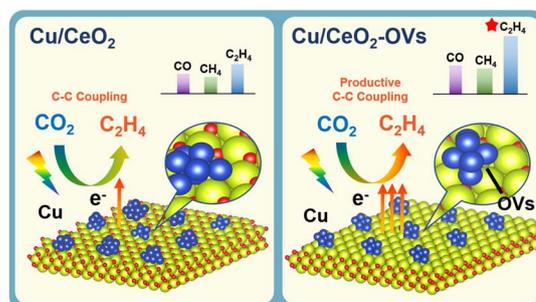
Juhui Oh, Ju-Hyeon Kim, Oskar J. Sandberg, Yong Ryun Kim, Chang-Mok Oh, In-Wook Hwang, Gangadhar Banappanavar, Kiyoung Park, Sanseong Lee, Hongkyu Kang\* and Kwanghee Lee\*



30095

## Interfacial synergy between Cu nanoclusters and oxygen vacancies on CeO<sub>2</sub> for enhanced selective photoreduction of CO<sub>2</sub> to C<sub>2</sub>H<sub>4</sub>

Shicheng Liu, Xiangyu Chen, Junbo Yu, Na Li and Qulan Zhou\*



30108

## Scalable template-free synthesis of B, N co-doped carbon bowls anchoring ultrafine Li<sub>3</sub>VO<sub>4</sub> nanocrystals for high power density and durable lithium-ion batteries

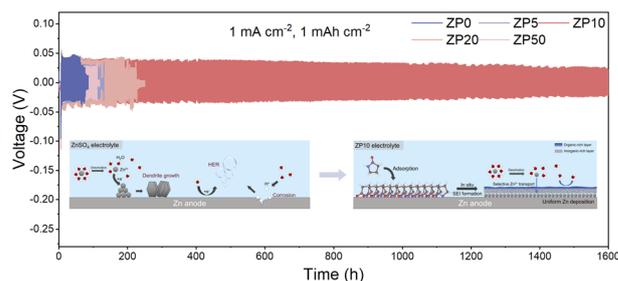
Xiaobin Xian, Guangyu Li, Meichun He, Yuan Du, Dongmei Zhang, Cunyuan Pei, Pengju Li, Bing Sun\* and Shibing Ni\*



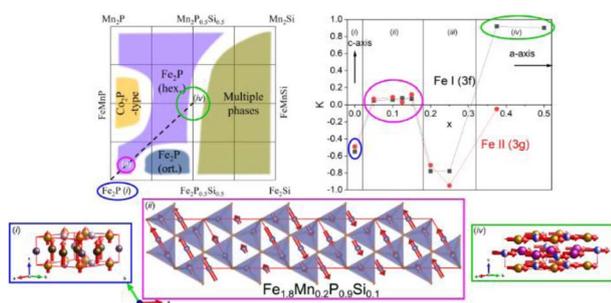
30118

## Adsorption-induced dual-layer solid electrolyte interface toward a highly reversible Zn anode

Jie Yang, Tianjiang Sun, Min Cheng, Weijia Zhang, Zhengtai Zha, Diantao Li, Jing Liang\* and Zhanliang Tao\*



30128

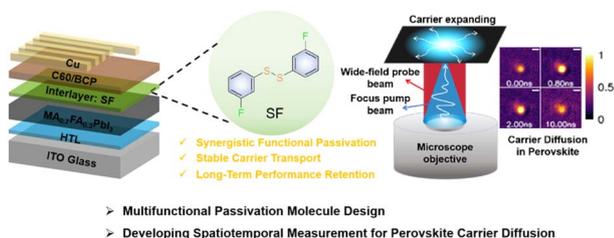


### Revealing complex magnetic interactions in Fe<sub>2</sub>P-based compounds: a study using Mössbauer spectroscopy and neutron diffraction

Karthika K. Thilakan, Sagar Ghorai, Wei Liu, Lennart Häggström, Fredrik Lindgren, Vladimir Pomjakushin, Premysl Beran, Oliver Gutfleisch, Peter Svedlindh and Johan Cedervall\*

30140

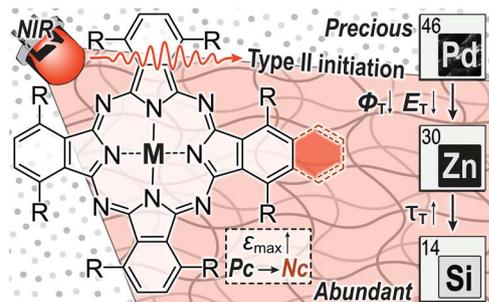
Stable Carrier Transport Enable Efficient Blade-Coat Perovskite Solar Cells Fabricated in Ambient Air



### Synergistic passivation and stable carrier transport enable efficient blade-coated perovskite solar cells fabricated in ambient air

Jian-An Li, Hailong Ma, Xiangpeng Ding, Shuoren Li, Bin Han, Wangxian Chen, Sihao Huang, Shuyan Chen, Yuelin Kuang, Zixi Liu and Chang Yan\*

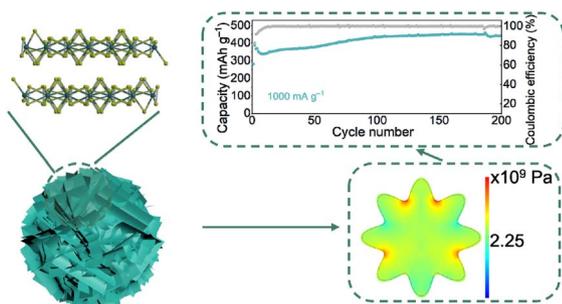
30151



### Design of phthalocyanine metal complexes for efficient far-red to near-IR light-initiated photopolymerizations

Connor J. O'Dea, Lauren M. Loftus, Tod A. Grusenmeyer, Jussi Isokuortti, Justin Ong, Sean T. Roberts\* and Zachariah A. Page\*

30158



### Hierarchical vanadium sulfide nanosheets with expanded interchain spacing for high-performance sodium-ion batteries

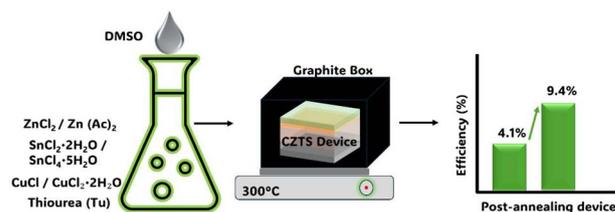
Jianbiao Wang,\* Peidian Chong, Wanwisa Limphirat, Haiyi Wang, Wuttthikrai Busayaporn, Lei Zhang, Debbie Hwee Leng Seng, Shengnan Sun, Zainul Aabdin, Chaoyu Dong, Mingdeng Wei\* and Zhi Wei Seh\*



30167

## In ambient air processed $\text{Cu}_2\text{ZnSnS}_4$ absorber layers from DMSO-based precursors: enhanced efficiency via device post-annealing

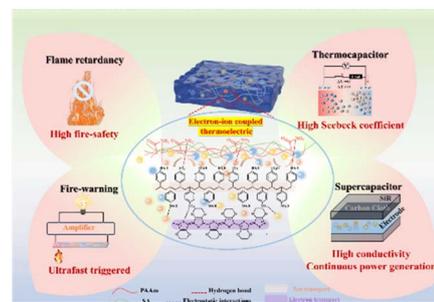
Achmad Nasyori,\* Maris Pilvet, Annabel Saar, Jüri Krustok, Mati Danilson, Reelika Kaupmees, Valdek Mikli, Yuancai Gong, Raavo Josepson, Edgardo Saucedo, Maarja Grossberg-Kuusik and Marit Kauk-Kuusik



30180

## Electron-ion coupling enables ionic hydrogel with high thermopower for low-grade heat harvest and sensitive fire warning

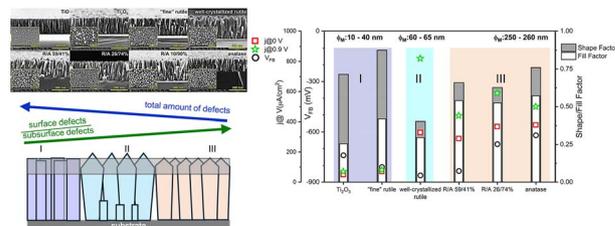
Weiguo Wang, Zexi Zhao, Zhengzhong Wu, Zizheng Xiong, Qingtao Zeng, Jiefeng Gao, Hongqiang Li, Xingrong Zeng\* and Xuejun Lai\*



30191

## Surface and bulk properties of black, blue and transparent $\text{TiO}_x$ thin-film photoanodes for green hydrogen generation by water splitting

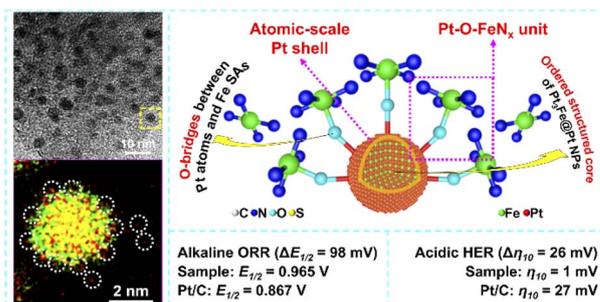
Katarzyna Ptacheta, Matthijs A. van Spronsen, Pilar Ferrer, Marta Radecka and Katarzyna Zakrzewska\*



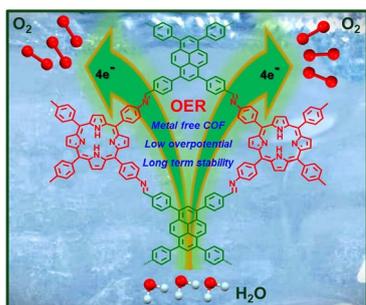
30204

## High-density small $\text{Pt}_3\text{Fe}@\text{Pt}$ nanoparticles in carbon materials becoming superior bi-functional catalysts through oxygen bridges with Fe single atoms

Benteng Sun, Qi Xu, Hang Lv, Zhengxing Lv,\* He Tian\* and Haibing Xia\*



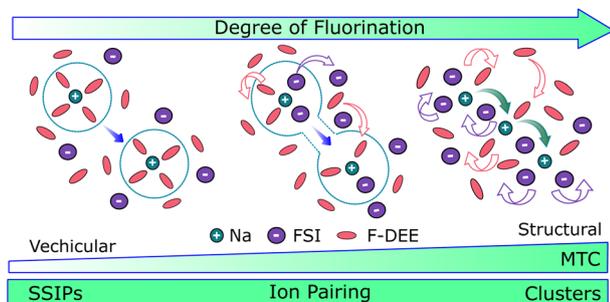
30214



### Metal free donor–acceptor covalent organic frameworks as efficient electrocatalysts for oxygen evolution reaction

Kamal Prakash, Imtiaz Ahmed, Rakesh Deka and Shaikh M. Mobin\*

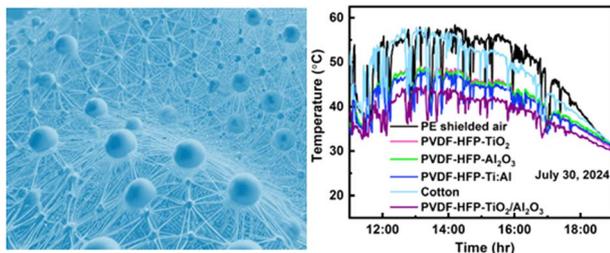
30224



### Beyond vehicular transport: fluorination-induced structural diffusion in ether electrolytes

Sidhant Kumar Barik and Hemant Kumar\*

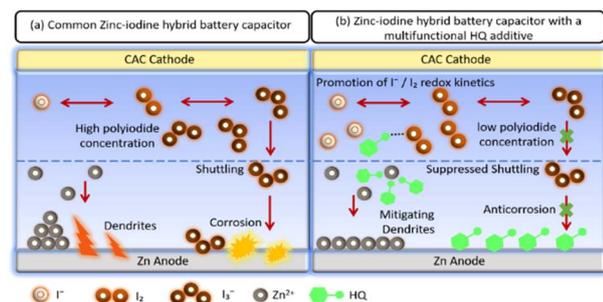
30235



### Electrospun bilayered PVDF-HFP-TiO<sub>2</sub>/Al<sub>2</sub>O<sub>3</sub> nanofiber membranes for high-performance passive radiative cooling

Dhandayuthapani Thiyagarajan, Shichen Li and Bong-Kee Lee\*

30244



### Multifunctional hydroquinone additive for enhanced zinc–iodine hybrid battery capacitors: suppressing polyiodide shuttle effects and dendrite growth

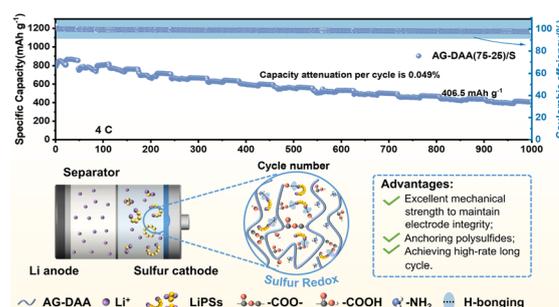
Balamurugan Selvaraj, Sungjin Kim, Junji Piao, Muhammad Hilmy Alfaruqi, Balaji Sambandam, Vinod Mathew and Jaekook Kim\*



30254

### A novel aqueous aspartic acid modified biomass binder for high-performance Li-S batteries

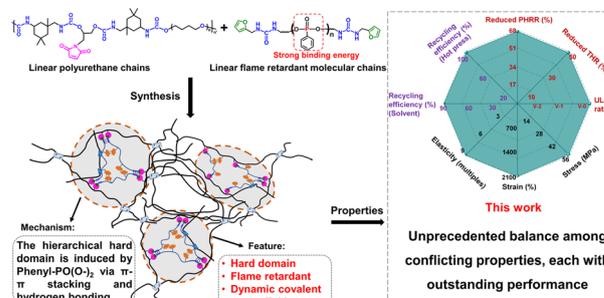
Qian Wang, Shasha Liu, Feifan Liang, Ruiqi Wang, Xiaoqiang Cai, Ya-Xiong Wang\* and Xingxing Gu\*



30265

### Spider silk-mimetic cross-linked elastomer: phenyl phosphonate-driven hierarchical hard domain for unprecedented integrated flame retardancy, mechanical robustness and recyclability

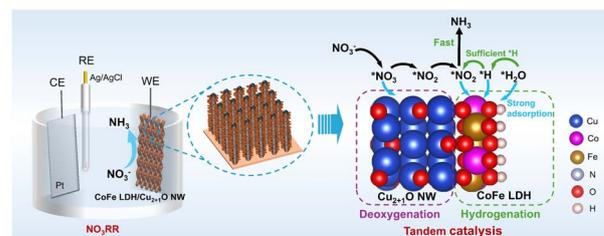
Shihu Han and Xiaoping Hu\*



30280

### Tandem catalysis for nitrate reduction to ammonia boosted by CoFe-layered double hydroxide on Cu<sub>2+1</sub>O nanowires in neutral media

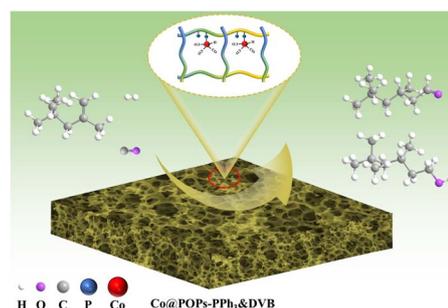
Yijun Duan, Peizhen Yang, Shuo Zhang, Qinan Song, Yameng Li, Xiang Liu and Miao Li\*



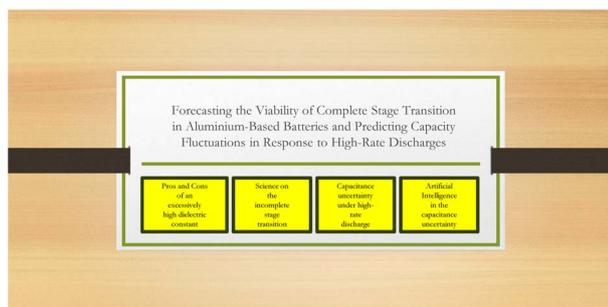
30291

### Tuning the coordination microenvironment of Co sites embedded in porous organic polymer for the hydroformylation of diisobutylene

Hong Wei, Cunyao Li, Guangjun Ji, Miao Jiang, Benhan Fan, Sen Feng, Xinyuan Liu, Lei Ma, Li Yan\* and Yunjie Ding\*



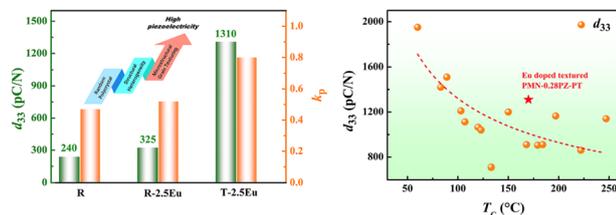
30301



### Forecasting the viability of complete stage transitions in aluminium-based batteries and predicting capacity fluctuations in response to high-rate discharges

Xuanming Chen, Ka Chun Li, King Cheong Lam, Zeyuan Di, Wai Keung Loh, Chak-yin Tang, Yuk Ming Tang, Wing Cheung Law, Chi Pong Tsui, Jiyan Dai, Leung Yuk Frank Lam,\* Xijun Hu\* and Chi Ho Wong\*

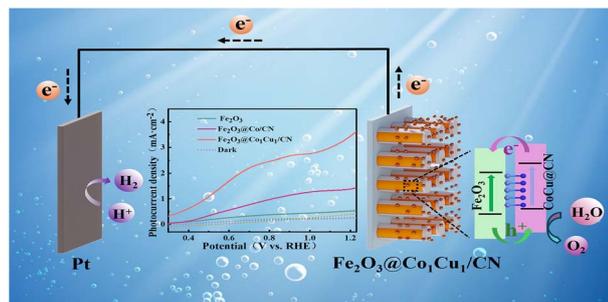
30311



### Exceptional piezoelectricity and high electromechanical coupling coefficients in $\text{Eu}^{3+}$ -doped PMN-PZ-PT textured ceramics via synergistic heterogeneity engineering

Yan Zhu, Guicheng Jiang,\* Shengpeng Han, Ran Lei, Piqi Song, Yingchun Liu, Shan-Tao Zhang, Danqing Liu, Bin Yang\* and Wenwu Cao

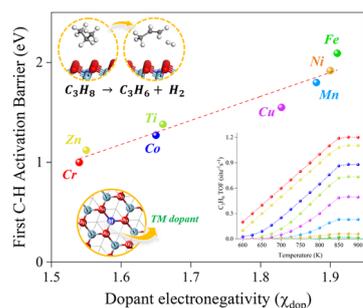
30324



### Revealing the synergistic role of the CoCu alloy and CN derived from a bimetallic MOF in promoting photoelectrocatalytic water oxidation

Huanhuan Wu, Xiang Li, Shuangshuang Huai, Shijian Zhang, Wenbin Ruan, Xiuxiu Huang, Congliang Cheng, Mingxuan Qu, Ping Li,\* Xinyao Yu\* and Xiufang Wang\*

30338



### Unveiling the role of dopant electronegativity in improving the catalytic performance of MXene catalysts in propane dehydrogenation using microkinetic simulations

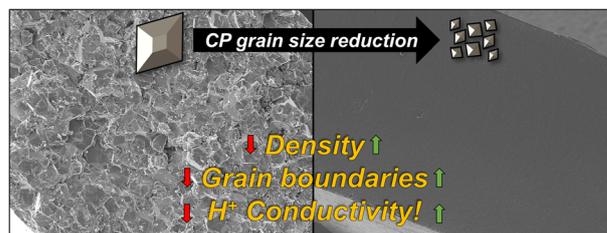
Aqsa Abid, XiaoYing Sun,\* Yuqing Tang, HuiJie Wang and Bo Li\*



30349

### Microstructural effects on intermediate temperature proton conduction in an oxalate-based coordination polymer

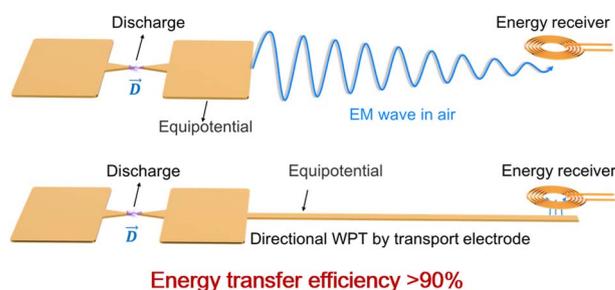
Ellan K. Berdichevsky, Kazuyoshi Kanamori and Satoshi Horike\*



30358

### Discharge-induced wireless nanogenerator for energy harvesting and directional wireless power transfer with over 90% efficiency

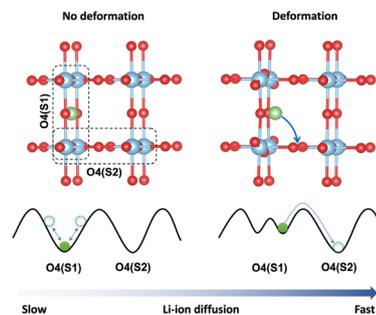
Xin Xia, Bowang Zhang, Haoyu Wang, Zuoqing Luo, Xi Tian, Wei Han\* and Yunlong Zi\*



30370

### Ion diffusion driven by dynamic lattice deformations in perovskite solid electrolytes

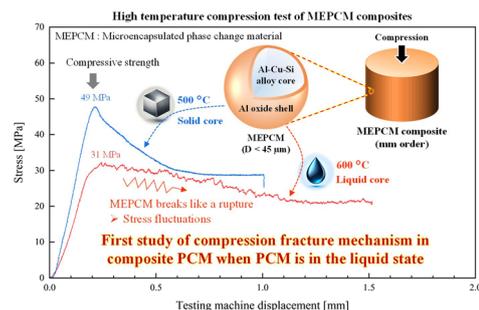
Bo Gao,\* Randy Jalem and Yoshitaka Tateyama\*



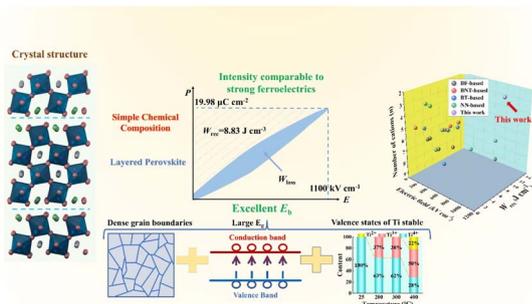
30382

### High-temperature composite phase change material with "concrete-like" strength even beyond the eutectic temperature

Yuto Shimizu, Takahiro Kawaguchi, Joshua Chidiebere Mba, Tomokazu Nakamura, Keita Tanahashi, Melbert Jeem and Takahiro Nomura\*



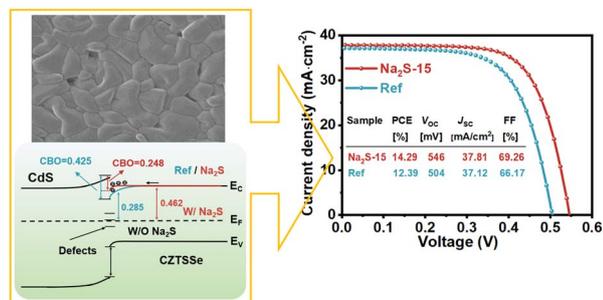
30399



### Lead-free $\text{La}_2\text{Ti}_2\text{O}_7$ dielectric ceramics with ultra-high energy storage density and electric field durability through layered ferroelectric layers

Teng Sui, Tao Wang, Qin Feng,\* Changlai Yuan, He Qi, Nengneng Luo,\* Xiyong Chen, Zhenyong Cen and Jiwei Zhai\*

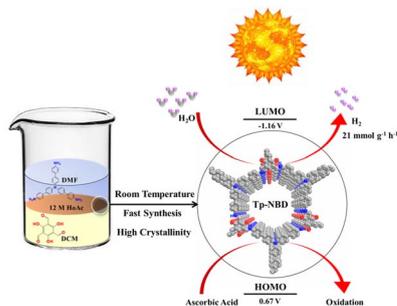
30411



### Simultaneously optimizing the heterojunction band alignment and passivating the absorber grain boundaries for kesterite solar cells with 14.26% efficiency

Pengfei Lu, Yuanyuan Wang, Wenxing Zhang, Shuai Cao, Yuena Meng,\* Dongxing Kou, Wenhui Zhou, Zhengji Zhou, Yafang Qi, Shengjie Yuan, Litao Han and Sixin Wu\*

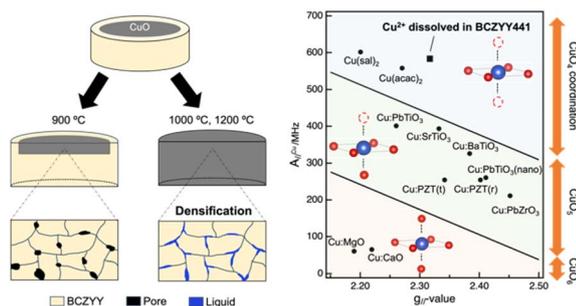
30419



### Liquid-liquid interfacial approach for the facile synthesis of Tp-NBD COFs for efficient photocatalytic hydrogen production

Syeda Andleeb Zahra Naqvi, Ateeq Ur Rehman Baloch, Umm Y. Umna, Kamran Muzaffar, Tayyab Sohail Aslam, Jinsong Chen\* and Yaobing Wang\*

30427



### Spectroscopic analysis of $\text{Cu}^{2+}$ dissolved in Y- and Yb-doped barium zirconates and its impact on sinterability and proton conduction

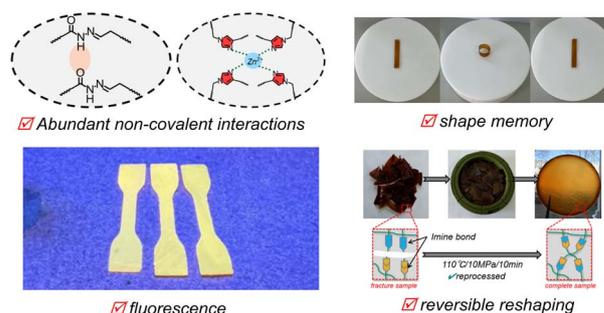
Yuto Unaki, Hiroaki Kawamori, Shohei Kobayashi, Norikazu Osada, Akihiro Ishii, Itaru Oikawa and Hitoshi Takamura\*



30436

### A degradable and tough supramolecular epoxy network with shape memory and clustering-triggered emission functions

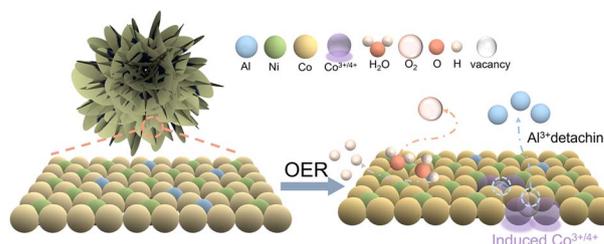
Cheng-wang Shi, Xiao-dong Li, Hao Jiang, Xing Su, Xiao-xuan Wang, Xu-feng Zhang\* and Mei-shuai Zou\*



30447

### Detachment of aluminium in NiCoAl-LDH modulates the active metal species to enhance oxygen evolution reaction activity

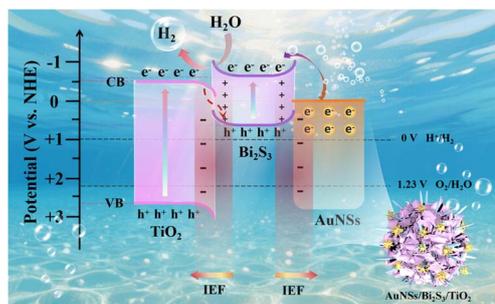
Tong Li, Yan-Kai Huang, Han Feng, Luo-Tian Lv, WenHao Zou, TongXin Tang, Kai-Hang Ye\* and Yong-Qing Wang\*



30457

### Au nanostars/Bi<sub>2</sub>S<sub>3</sub>/TiO<sub>2</sub> Schottky/S-scheme dual heterojunctions for efficient photocatalytic hydrogen evolution

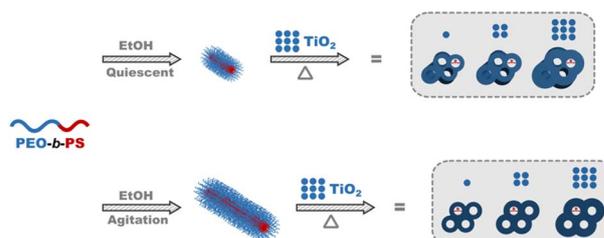
Yuxin Sun, Jinhua Li,\* Zhiying Wang and Hancheng Zhu



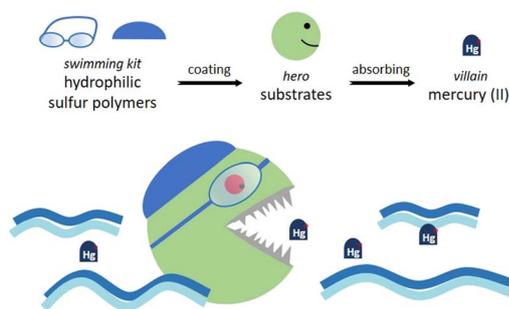
30467

### Growth of cylindrical micelles and their use to prepare porous materials with tailored dimensions and alignment

Mengxue Zhang, Xiaomeng Li, Chuanbing Tang and Morgan Stefik\*



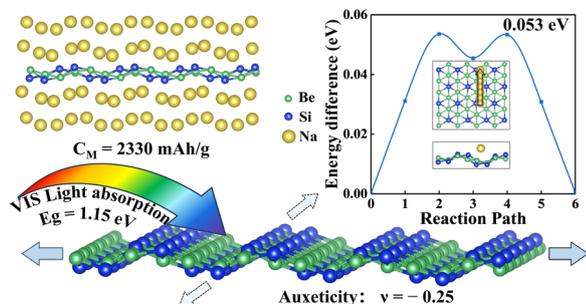
30480



### Inverse vulcanised sulfur polymers as hydrophilic coatings

Xi Deng,\* Joseph J. Dale, Pan Yang and Tom Hasell\*

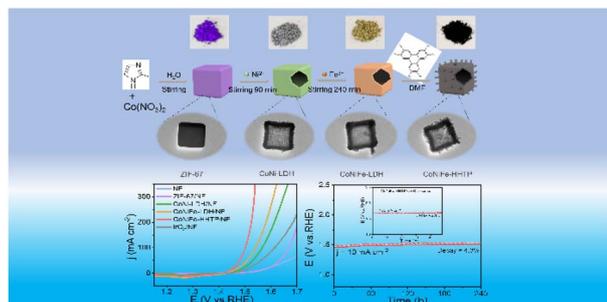
30490



### A multifunctional beryllium silicide monolayer with negative Poisson's ratio and high-capacity sodium-ion storage

Zhiyu Fang, Jiaxin Jiang, Hongyan Guo, Weiyi Wang, Zhiwen Zhuo\* and Ning Lu\*

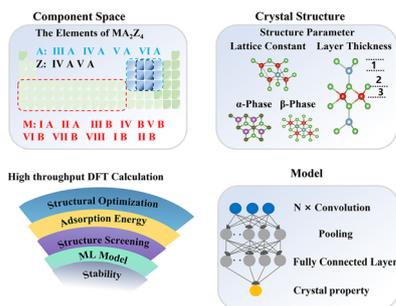
30500



### Conductive metal-organic-framework enhanced highly efficient electrocatalytic performance of hollow CoNiFe-LDH nanocages for the oxygen evolution reaction

Saiya Guo, Huihui Li, Manman Shi, Qianqian Zhu, Jieding Wei, Qingqing Zha and Yonghong Ni\*

30509



### Deep-learning-assisted high-throughput discovery of metallophilic MA<sub>2</sub>Z<sub>4</sub> nanomaterials

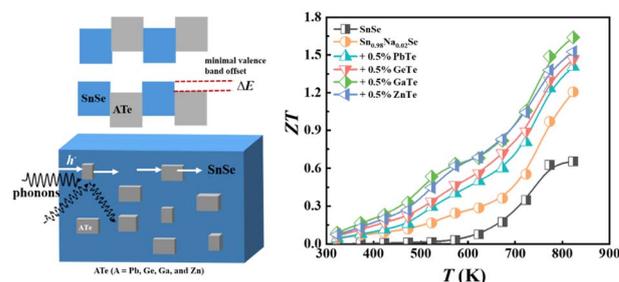
Peng Zhang, Xiang Feng, Dominik Legut, Chao Lin, Haohao Dong, Zhihao Li, Zhi Wei Seh and Qianfan Zhang\*



30519

## Effects of a second phase with different bandgaps on the thermoelectric performance of polycrystalline SnSe materials

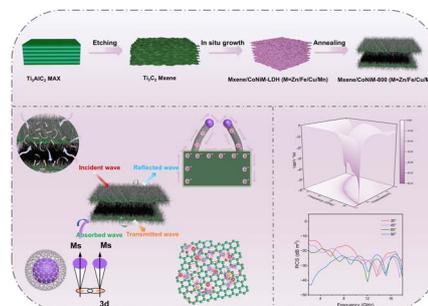
Ze Li, Xing Yang, Tian-En Shi, Yang-Wei Wang, Wang-Qi Bao, Si-Jiang Huang, Yi-Xin Zhang, Jing Feng, Zhen-Hua Ge\* and Li-Dong Zhao\*



30531

## Dual-regulation of magnetization and multi-interfacial strategies in MXene/CoNiM-800 (M = Fe/Cu/Mn/Zn) hierarchical structures for synergistic microwave absorption

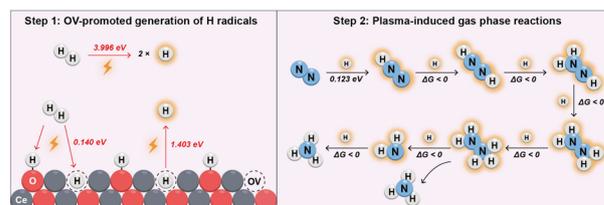
Shan Jian, Hongyu Hu, Ying Zhang, Chenguang Ouyang, Haojie Yu\* and Li Wang\*



30546

## Plasma-derived hydrogen radical-mediated $\text{N}_2$ activation for mild ammonia synthesis: insights into the importance of oxygen vacancies in the reaction mechanism

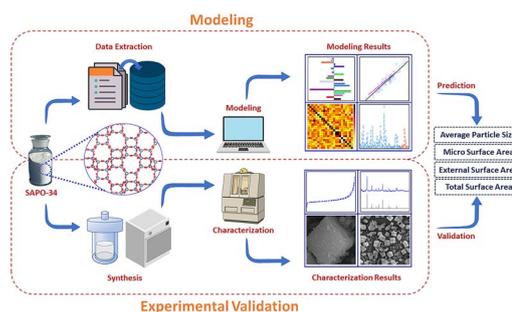
Shijian Luo, Yongduo Liu, Lin Guo, Yang Song, Yuran Yang, Fadong Chen, Linhu Wang, Yanan Chen,\* Siguo Chen\* and Zidong Wei



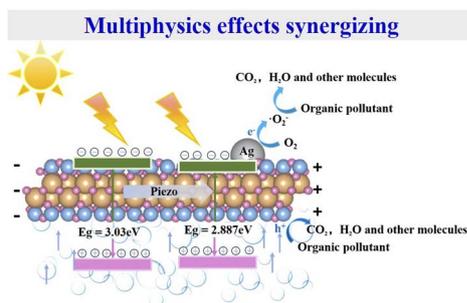
30554

## AI-designed hierarchical SAPO-34 catalyst breakthrough with experimental verification

Ali Pourian, Ali Rahmanifard, Sina Maghsoudy,\* Mona Torabi Verki, Mehdi Salami-Kalajahi and Sajjad Habibzadeh\*



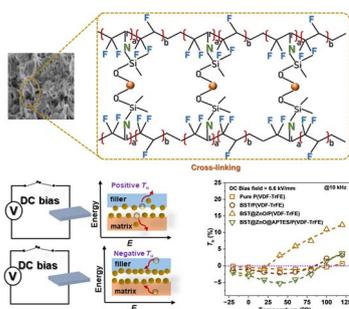
30576



### Ultrafast photocatalytic degradation enabled by atomically dispersed Ag on BiOI<sub>3</sub> nanosheets: unraveling synergistic photo-thermal-ferroelectric effects

Luyu Zhou, Sixiang Liu, Guolong Wu, Quan Xie,\* Wang Zhang,\* Jie Peng, Shuhui Sun\* and Junlong Tian\*

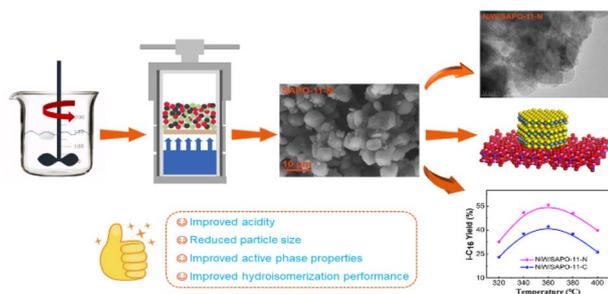
30587



### Interface-engineered core-shell nanoparticle embedded polymer nanocomposite demonstrating low voltage and temperature dependent tunable dielectric response

Arif Hussain, Suibin Luo, Jawaria Jawaid, Tengyu Li, Junyi Yu, Pengpeng Xu, Zijun Wang and Shuhui Yu\*

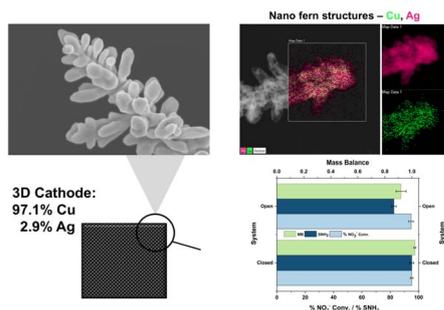
30599



### SAPO-11 molecular sieve synthesized *via* a novel alcohol-water solvent vapor-induced self-assembly conversion method and the hydroisomerization performance of its NiWS-supported catalyst

Xiaojun Dai,\* Tingting Liu, Lingjuan Mao and Zixuan Lv

30618



### Electroless generation of nano-silver fern catalysts upon Cu foam as a highly effective bimetallic electrocatalyst design for ammonia electrosynthesis

Kenneth Flores,\* Colleen Gately, Ivory Flemister, Emma Mast, Gabriel A. Cerrón-Calle, Manuel A. Roldan and Sergi Garcia-Segura\*



30632

### A sulfonate ligand hybrid ZIF-8 modified separator achieved high-performance Li–S batteries

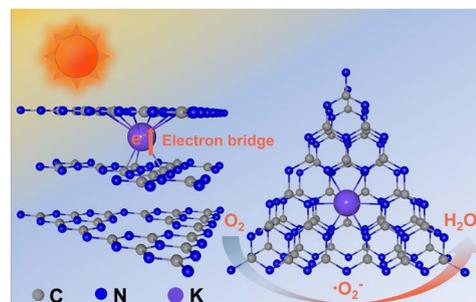
Xinzhao Xia, Yixian Xiao, Wenting Xie, Jiale Liu, Yinuo Yu, Yunxiao Ren, Jiajun Chen, Bo Yang, Jiaying Zhang, Zhou Yang, Wei Hu\* and Huai Yang



30642

### Surface defect engineering and MOF derivatives regulate the electron transport pathway of polymeric carbon nitride for an efficient photocatalytic 2e<sup>-</sup> oxygen reduction reaction to form H<sub>2</sub>O<sub>2</sub>

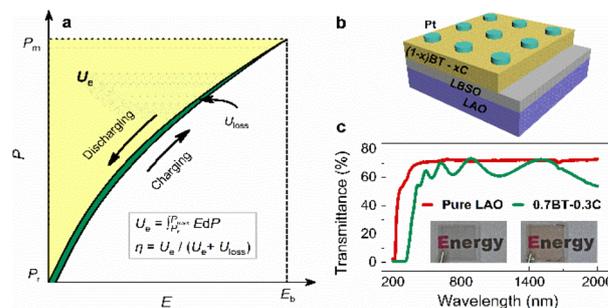
Min Liu, Siyuan Di, Hailan Qin, Pin Chen, Yunkang Liu, Huan Liu, Qiuyue Zhang, Zihan Li and Shukui Zhu\*



30652

### Highly transparent electrostatic energy storage capacitors based on CeO<sub>2</sub>-doped BaTiO<sub>3</sub> lead-free nanocomposite films

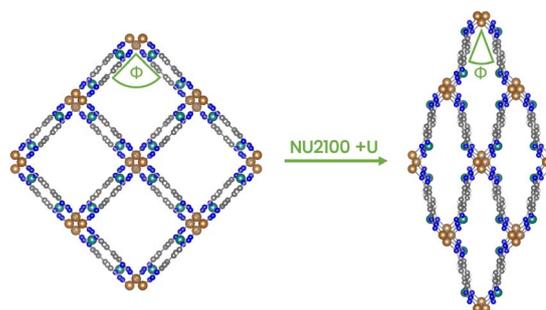
Zhengyang Kong, Jiahang He, Yufan Guo, Xu Wang, Wei Gan, Pingfan Chen, Kun Han, Xianbing Miao,\* Zhen Huang\* and Liqiang Xu\*



30661

### Electron-correlation driven structural instability and adsorption mechanism in the metal–organic framework NU2100

W. Graham, T. Jenkins, C. Fivecoat, J. H. West, E. C. Hill, Y. Zeng, S. Ullah and T. Thonhauser\*



## Hygroscopic films integrated with the fin structure: a long-term cooling solution for fin heat exchangers

Chengzhi Hu,<sup>\*</sup> Yanhui Jiang, Haiyuan Zhang, Yong Cai, Yubai Li and Dawei Tang

