

# Journal of Materials Chemistry A

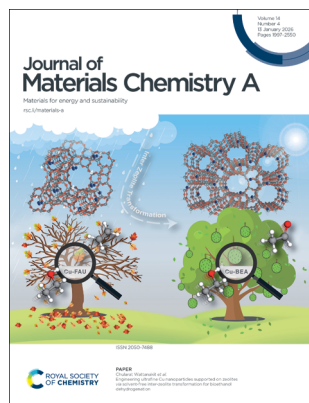
Materials for energy and sustainability

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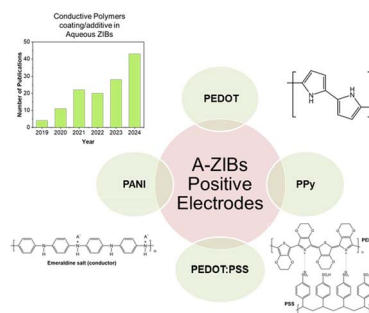
**Inside cover**  
See Jing-Fang Huang *et al.*, pp. 2136–2142. Image reproduced by permission of Jing-Fang Huang from *J. Mater. Chem. A*, 2026, 14, 2136.

## REVIEWS

### 2011

#### A comprehensive and critical review on the application of conductive polymers as coatings for aqueous zinc-ion battery positive electrode materials

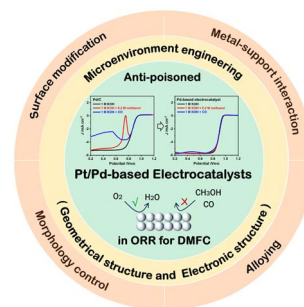
Mohsen Baghodrat, Fabio La Mantia\* and Giorgia Zampardi\*



### 2030

#### Microenvironment engineering to modulate the tolerance of Pt/Pd-based electrocatalysts for methanol crossover in oxygen reduction reaction

Hui Fu, Kaibin Chu,\* Kangqi Chang, Kexin Shu, Longsheng Zhang,\* Fulai Zhao\* and Yiyu Feng



# RSC Applied Interfaces

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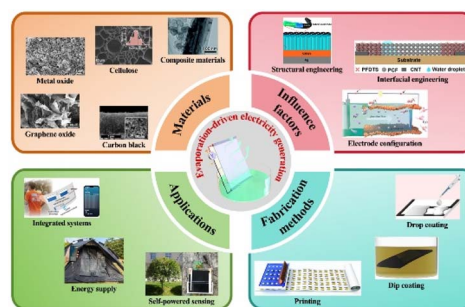
Fundamental questions  
Elemental answers

## REVIEWS

2051

**Harnessing water evaporation: flexible generators for next-generation self-powered systems**

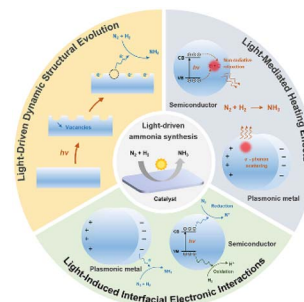
Qun Liu, Jing Liang and Wei Wu\*



2071

**Light-driven ammonia synthesis from nitrogen and hydrogen**

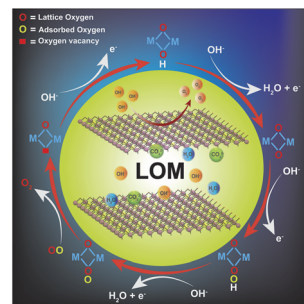
Yuqing Xu, Yifei Xue, Chaoran Li, Yu Ji, Yuxuan Zhou, Qianyue Feng, Jiahui Shen, Xingda An,\* Kai Feng\* and Le He\*



2084

**Structure–activity correlation in layered double hydroxides: facilitating oxygen evolution through the lattice oxygen mechanism**

Arun Karmakar, Suhana Karim, Rathindranath Biswas and Arnab Dutta\*

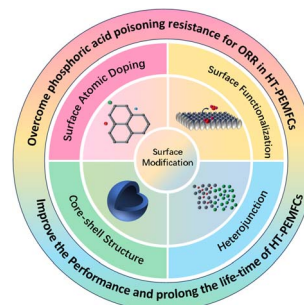


## PERSPECTIVE

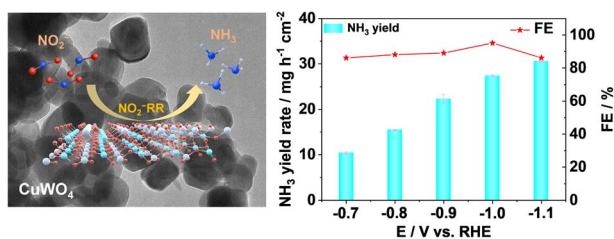
2102

**Surface engineering strategies to mitigate phosphoric acid poisoning resistance in oxygen reduction catalysts for HT-PEMFCs**

Jiahui Mo, Jiawei Shi, Weiwei Cai, Jing Li\* and Ligang Feng



2113

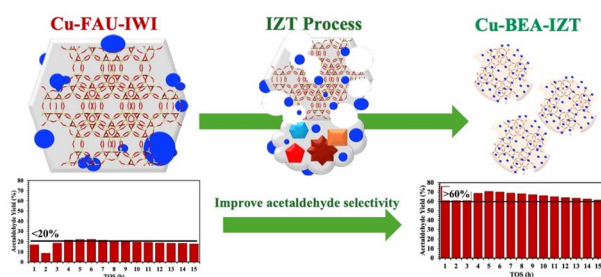


### Highly selective electrochemical reduction of nitrite to ammonia over $\text{CuWO}_4$ nanoparticles

Baofang Zhao, Lisi Xie,\* Hao Chen, Qiuyue Chen, Xuguang An, Qian Liu, Jing Zhang, Weitang Yao and Qingquan Kong\*

## PAPERS

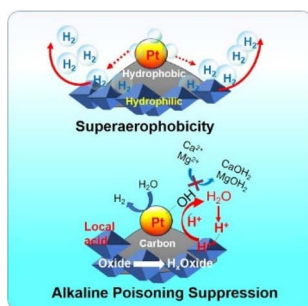
2120



### Engineering ultrafine Cu nanoparticles supported on zeolites via solvent-free inter-zeolite transformation for bioethanol dehydrogenation

Krissanapat Yomthong, Ammarika Makdee, Asadawut Soyphet, Kachaporn Saenluang, Narasiri Mainewklang, Somlak Ittisanronnchai, Wanwisa Limphirat, Pinit Kidkhunthod and Chularat Wattanakit\*

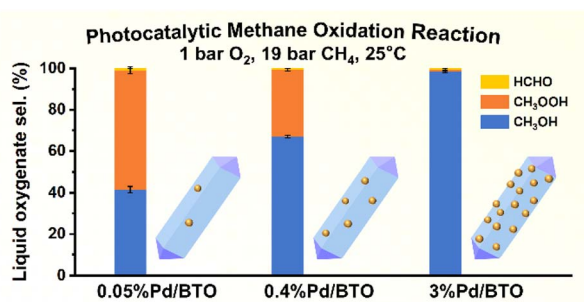
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### Gradient-wettability oxide-Pt/C electrocatalysts for stable seawater hydrogen evolution via superaerophobicity and surface acidity

Jing-Fang Huang,\* Jung-Hung Huang and Che-Jung Hsu

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### Pd composition and dispersion control selectivity in photocatalytic methane oxidation

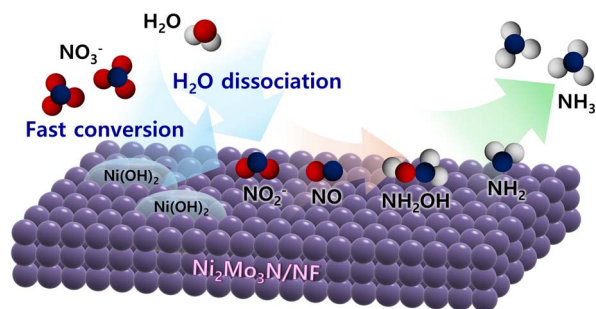
Jiawei Wu, Hu Ding, Yan Wang, Ulfi Muliane, Shuji Anabuki, Naoya Murakami, Xinli Zhu, Akira Yamakata, Teruhisa Ohno and Shi Nee Lou\*



2158

### Accelerated electrochemical nitrate-to-ammonia conversion over bimetallic $\text{Ni}_2\text{Mo}_3\text{N}$ with mechanistic insights

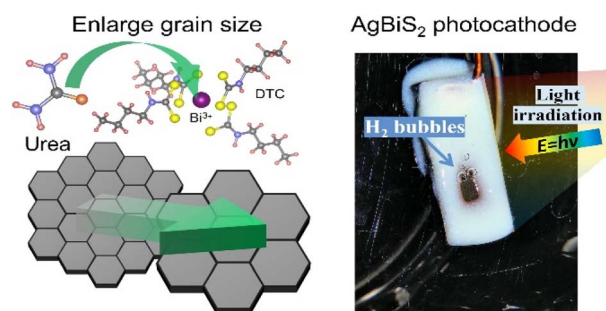
So Eun Jang, Jae Young Kim\* and Duck Hyun Youn\*



2167

### Simultaneous engineering of cation disorder and morphology of molecular-ink derived $\text{AgBiS}_2$ photocathodes for solar water splitting

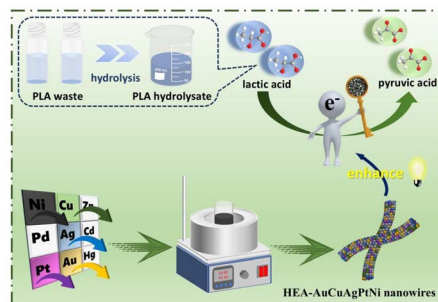
Neul Ha, Jisu Jung, Dayeon Lee, Jaemin Park, Hyunjung Shin, Sang Uck Lee and Wooseok Yang\*



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### Multisite synergism-induced electron regulation of high-entropy alloy nanowires for electrocatalytic reforming of polylactic acid plastic hydrolysate

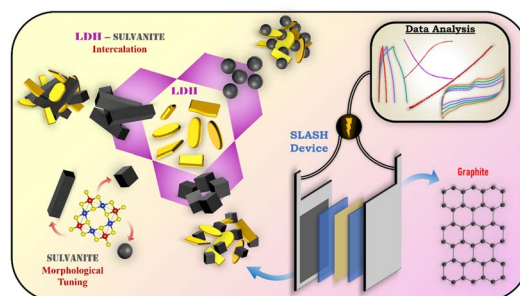
Ruichen Geng, Ranran Wei, Xiaoying Zhang, Zhihan Zhang, Yinglong Wang, Guoxuan Li and Shuli Yin\*



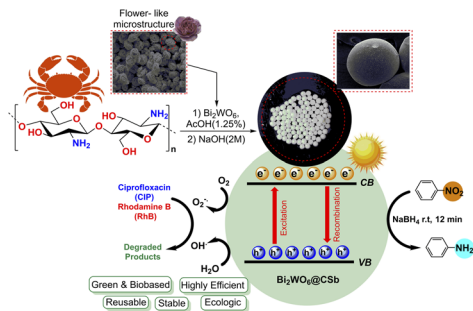
2188

### Surface engineered sylvanite integrated with layered double hydroxide for asymmetric hybrid supercapacitor

Sachin Sreedhar, Ganesan Shanmugam\*, Chandru Gunasekaran and Monisha Venkatesan



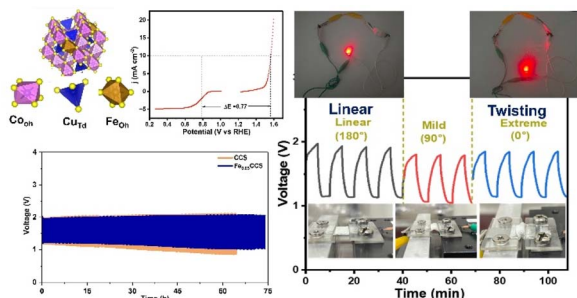
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### Green flower-like $\text{Bi}_2\text{WO}_6$ supported on chitosan beads: a powerful and sustainable visible-light-driven water treatment photocatalyst

Abdelmalik Brik, Mustapha El Kadiri, Taha El Assimi, Omar Lakbita, Zouhair Hanani, Blaz Jaklic, Hicham Ben Youcef, Said Laassiri, Geraldine Gouhier, Abdellatif El meziane, Abdelkrim El Kadib and Mohammed Lahcini\*

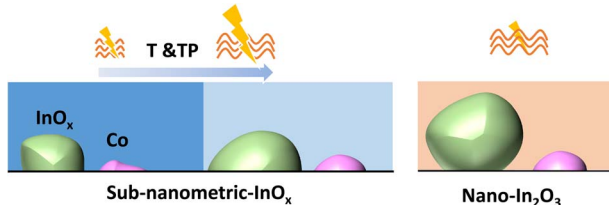
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### Fe-doped $\text{CuCo}_2\text{S}_4$ thiospinel as a high-performance oxygen electrocatalyst for rechargeable all-solid-state zinc–air batteries

Ravinder Sharma, Abhay Rawat, Arkaj Singh, Jinta Merlin johny, Akriti Gautam, Jayanta Parui, Tisita Das and Aditi Halder\*

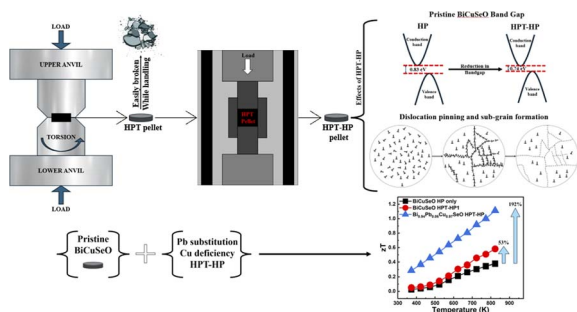
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### Cobalt promotion of the $\text{InO}_x$ – $\text{TiO}_2$ heterojunction for dual photothermal reduction of $\text{CO}_2$

Rocio Sayago-Carro, Esperanza Fernández-García, Irene Barba-Nieto, Uriel Caudillo-Flores, Lu Ma, José A. Rodríguez, Marcos Fernández-García\* and Anna Kubacka\*

2250



### Effect of severe plastic deformation on thermoelectric properties of $\text{BiCuSeO}$

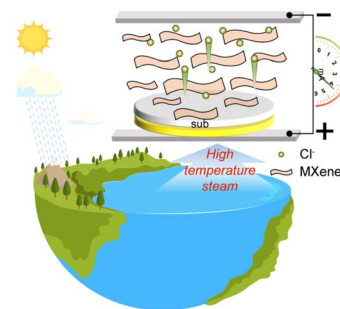
Gowtham Venkatesan, Srashti Vishvakarma, Inder Kumar, Satyam Suwas and Ramesh Chandra Mallik\*



2264

## Ionic liquid-armed MXene membranes enabling high-performance moisture-driven power generation

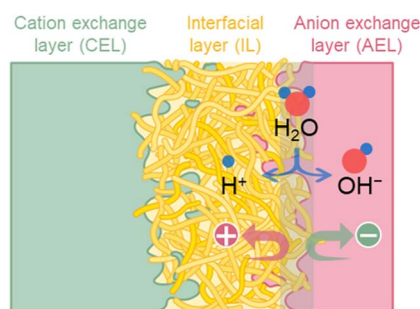
Wenjia Guo, Shiwei Chen, Yanlei Wang,\* Kun Li, Rongrong Wang, Ping Zhang, Xiuhong Yang and Hongyan He\*



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## Manipulating interlayer morphology in electrospun bipolar membranes: a key to overcoming the trade-off between perm-selectivity and resistance

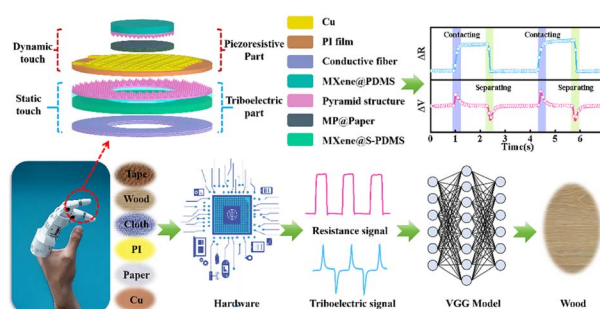
Tao Wang, Nadia Boulif, Zandrie Borneman and Kitty Nijmeijer\*



2284

## Dual-modal flexible tactile sensor for complex scenario material recognition

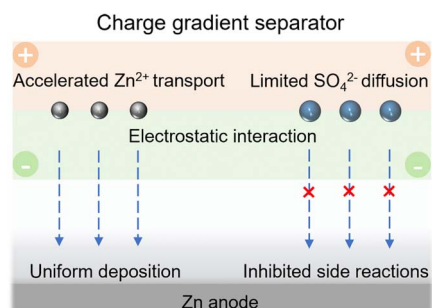
Jingchao Yuan, Junbin Yu,\* Jian He,\* Jiliang Mu, Junfei Lin, Jie Li, Yanxiang Chang and Xiujian Chou\*



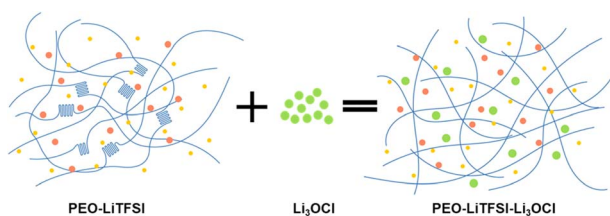
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## Charge gradient separator regulating ion transport towards stabilizing Zn metal anodes

Zhikai Li, Wenjie Fan,\* Xinlei Yu, Xingjie Wang, Yanying Dong, Haisheng Huang, Weiqian Tian\* and Jingyi Wu\*



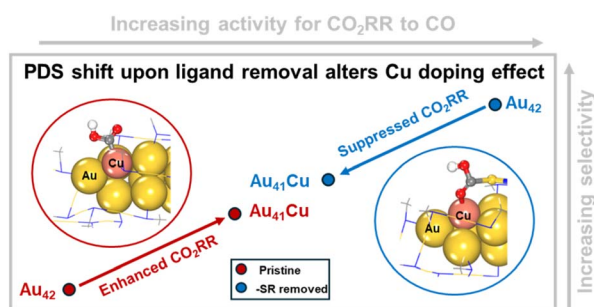
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### Embedding antiperovskite nanophases into polymer hosts boosts ionic conductivity and interfacial compliance for all-solid-state lithium metal batteries

Bing-Ni Gu, Luc-Phuong-Nhu Tran, Zih-Siyuan Lin, Yo-Shun Chen, Shih-Ming Lin, Yu-Ting Chen, Yang-Hsin Shih, Yun-Shuo Chan, Shu-Chi Wu, Kai-Siang Jhang, Hsing-Yu Tuan and Yu-Lun Chueh\*

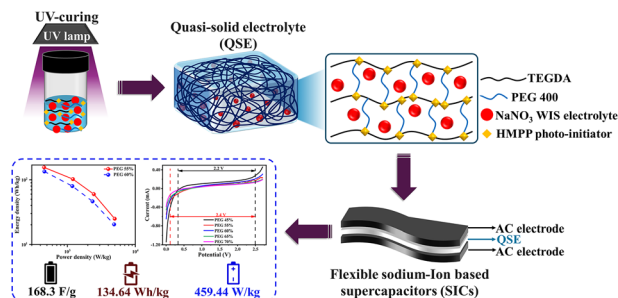
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### Atomically precise Au<sub>42</sub> and Cu-doped Au<sub>42</sub> nanorods for CO<sub>2</sub> reduction: the critical role of ligand removal

Rahul Somni, Anik Sarkar, Lianshun Luo, Rongchao Jin, Gangli Wang\* and Guoxiang Hu\*

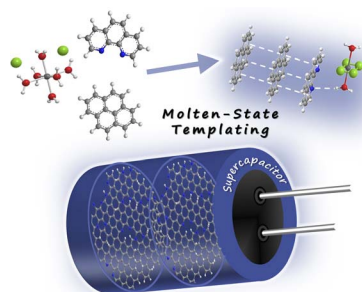
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### Quasi-solid electrolyte based on cost-effective sodium salt for high-performance sodium-ion supercapacitors

Natthawut Suebsing, Kornkanok Noulta, Channarong Puchongkawarin, Oruethai Jaiboon, Adulvit Chuaephon, Arisa Phukhrongthung and Santamon Luanwuthi\*

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### Magnesium chloride salt-assisted synthesis of porous N-doped carbons from molten polycyclic aromatic hydrocarbons for high-performance supercapacitors

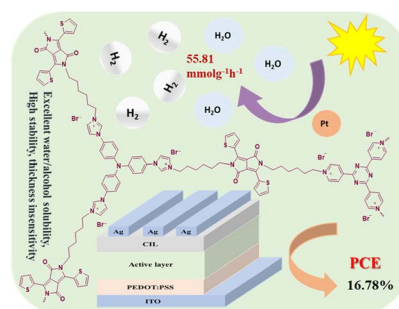
Keren Barchichat, Alagar Raja Kottaichamy,\* Michael Volokh, Rotem Geva, Alexander Upcher, Jonathan Tzadikov,\* Jesús Barrio and Menny Shalom\*



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## Design of multibranching diketopyrrolopyrrole polyelectrolytes as versatile materials for efficient photocatalytic hydrogen evolution and organic solar cells

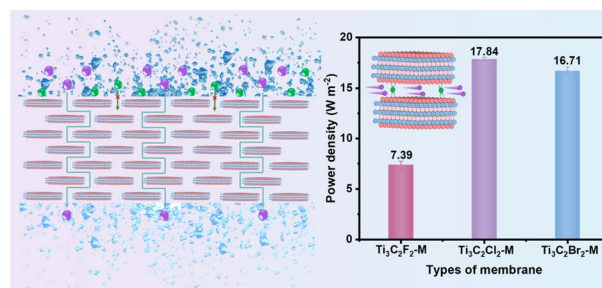
Muhammad Rafiq, Raza Ullah, Adeel Ahmed, Shaheer Hasan Khan, Pan Wei, Muhammad Usman, Muhammad Adnan, Ali Ahmad, Muhammad Mateen, Muhammad Fayaz, Waqas Haider, Bing Yu\* and Hailin Cong\*



2360

## Surface termination engineering of MXene nanofluidic membranes for efficient osmotic energy harvesting

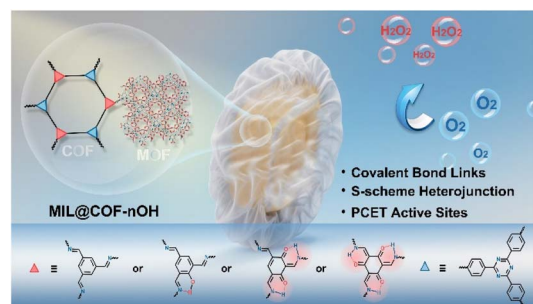
Yi-Min Su, Wenyu Yuan,\* Meng-Ru Cui, En-Lei Wen, Hui Zhang and Quan-Guo Zhai\*



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## Hydroxy functional groups modulate S-scheme MIL-125-NH<sub>2</sub>@COF heterojunctions for regulated photocatalytic production of hydrogen peroxide

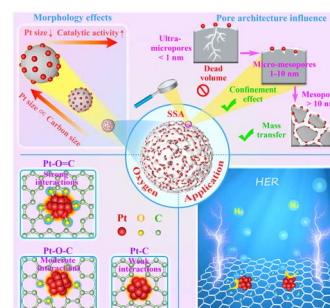
Cheng Chen, Xiaolin Liu,\* Jing Jiang, Lin Tang, Fang Sun\* and Xi Liu\*



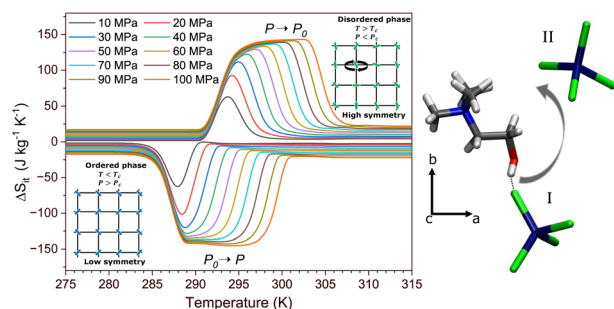
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## Decoupling the crucial architectures of carbon supports governing Pt nanoparticle anchoring behaviour for electrocatalytic hydrogen evolution

Baodong Du, Cancan Zhang, Wende Lai, Houmao Chen, Xianyou Luo, Jie Li, Ruoyu Wu, Kangming Wang, Haisheng Zhen,\* De Li,\* Wenjie Huang\* and Yong Chen\*



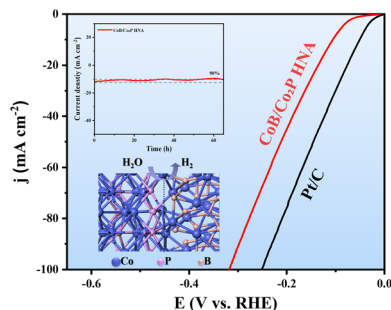
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### Understanding the barocaloric response of choline-based hybrid ionic plastic crystals [choline]<sub>2</sub>CoCl<sub>4</sub> and [choline]<sub>2</sub>ZnCl<sub>4</sub>

Joshua J. B. Levinsky, Shivani Grover, Phillippa Partridge, Eliza K. Dempsey, Emmanouil K. Charkiolakis, David Gracia, Marco Evangelisti, Charles J. McMonagle and Claire L. Hobday\*

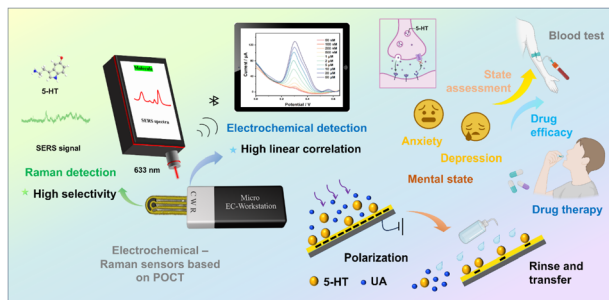
2411



### Interfacial electron transfer of a MOF-derived Co–B–P catalyst for the hydrogen evolution reaction with improved activity and stability

Qi Zhang, Siyuan Xu, Qunlong Wang, Ruijing Wang,\* Guangfeng Wei\* and Xuefeng Wang\*

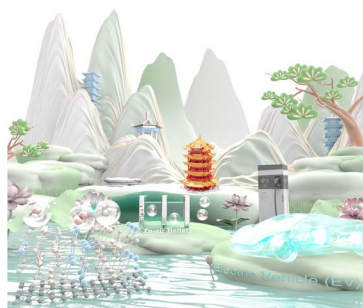
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### Portable high-sensitivity Raman-electrochemical microsensor utilizing a polarization shift strategy for anti-interference detection of 5-hydroxytryptamine

Ruwei Liu, Yuyang He, Fan Zhao, Yunhan Ling,\* Xiaoming Yuan, Shilin Li and Zhengjun Zhang\*

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### Interfacial and electronic modulation of FeP–CoP on reduced graphene aerogel boosts bifunctional catalysis for overall water splitting

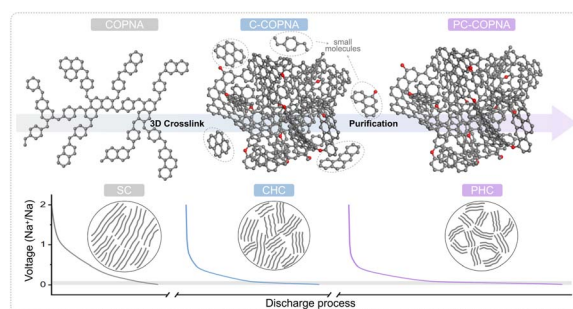
Yifeng Xue, Mingyue Qiu, Jie Luo, Hongke Qiao, Tianyi Yang, Hong Chen, Guiyu Zhu, Xiaoli Li, Lu Zou, Xiaoxiao Zhang, Jianzhi Wang\* and Faquan Yu\*



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### COPNA resin-derived hard carbon: enhanced low-voltage plateau behavior from three-dimensional structured precursors

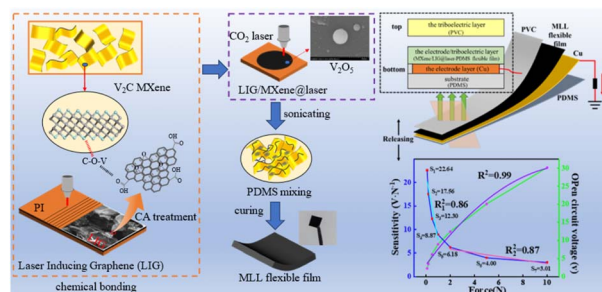
Hengjian Pu, Jikun Li, Tailong Zhang, Yiwen Yang, Yanchen Liu, Lingrui Cui, Jie Lei, Jin Li, Fahai Cao, Teng Zhai\* and Hui Xia



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### Laser-induced MXene/LIG ternary heterostructure: construction and health monitoring application of a high performance self-powered friction sensor

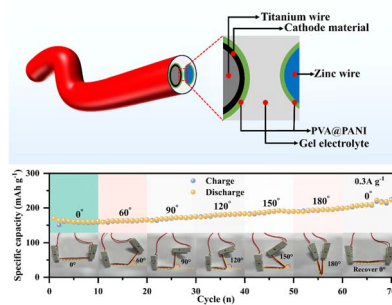
Qiancheng Liu, Changxia Liu,\* Xudong Wei, Junlong Sun and Xueye Chen\*



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### Defect-engineered VO<sub>x</sub> cathode and novel polyvinyl alcohol@polyaniline hydrogel separator for ultra-stable fiber Zn-ion batteries

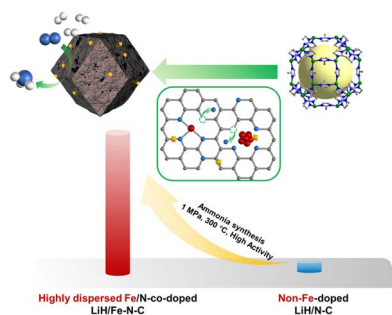
Yahui Zhang, Juan Xu,\* Yuezhou Jing, Mengge Ding, Jiayi Li, Pibin Bing\* and Zhongyang Li\*



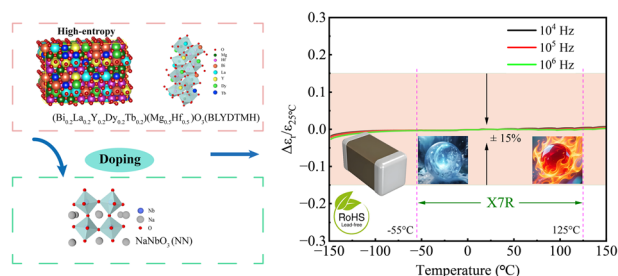
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### Lithium hydride synergy with Fe/N-co-doped porous carbon for efficient ammonia synthesis

Yefei Wang and Fei Chang\*



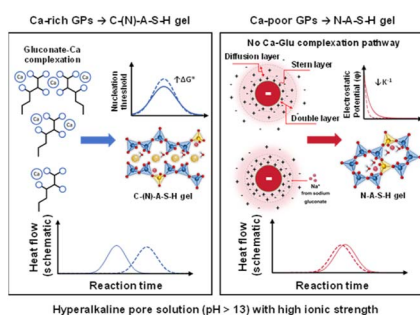
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### Modification of sodium niobate energy storage ceramics via doping with a high-entropy phase

Shuai Zou, Wenjie Fan, Lida Tong, Yaohang Gu,\*  
Xiaoyan Zhang\* and Xiwei Qi\*

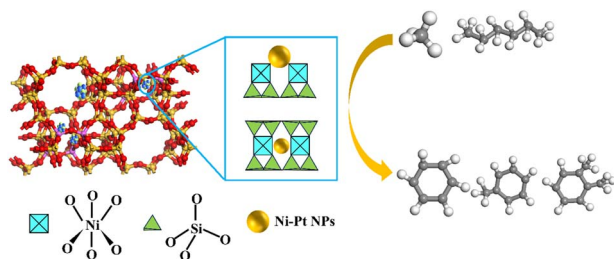
2507



### Effect of gluconate molecules on the reaction kinetics of C-(N)-A-S-H and N-A-S-H gel formation

Jiafeng Kong, Chao Sun, Zuhua Zhang,\* Chenglong Cai,  
Yubin Cao, Yanru Wang, Hongyan Ma, Xuesen Zeng\*  
and Hao Wang

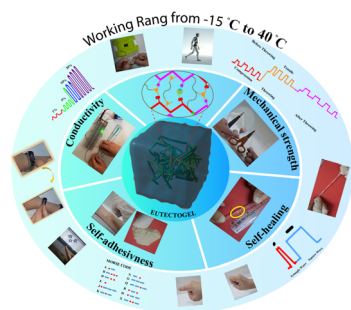
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### Insights into the mechanism of enhanced methane low-temperature coupling conversion over zeolite-encaged Ni-Pt catalysts

Lunan Wu, Xiu-Jie Yang,\* Jun Li, Weichao Chou, Bin Lou,\*  
Jing Wu, Nan Shi, Fushan Wen and Dong Liu\*

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### Fabrication of multifunctional eutectogels for wearable sensing applications

Al Nimra, Muhammad Sher, Luqman Ali Shah\* and Jun Fu

