

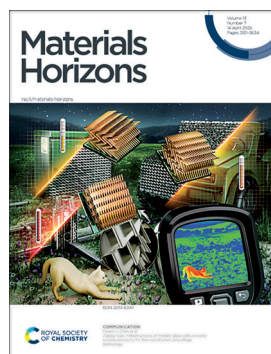
# Materials Horizons

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## IN THIS ISSUE

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### Cover

See Hsuen-Li Chen *et al.*, pp. 3307–3315. Image reproduced by permission of Hsuen-Li Chen from *Mater. Horiz.*, 2026, 13, 3307.



### Inside cover

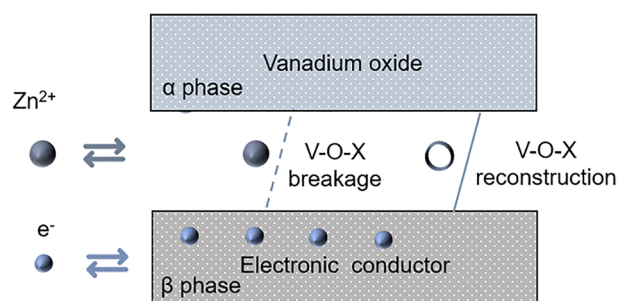
See Seong-Yun Yun *et al.*, pp. 3316–3325. Image reproduced by permission of Seong-Yun Yun from *Mater. Horiz.*, 2026, 13, 3316.

## FOCUS

3144

### Interface storage of vanadium based materials in zinc-ion batteries

Jie Chen, Yuhang Dai, Hang Yang and Guanjie He\*

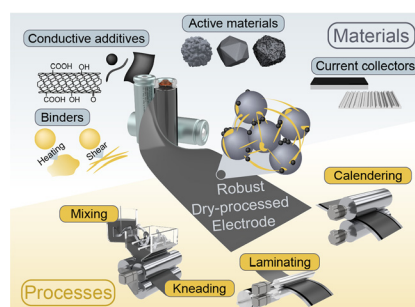


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### Materials- and process-driven microstructural engineering for scalable dry-processed electrode manufacturing

Gwonsik Nam, Jaejin Lim, Seungyeop Choi, Sang Cheol Nam, Kijoo Hong, Jisung Lee and Yong Min Lee\*



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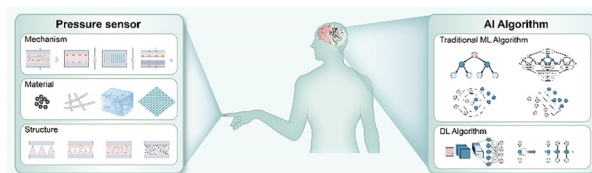


## REVIEWS

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### Flexible pressure sensing systems empowered by artificial intelligence: materials, devices and emerging applications

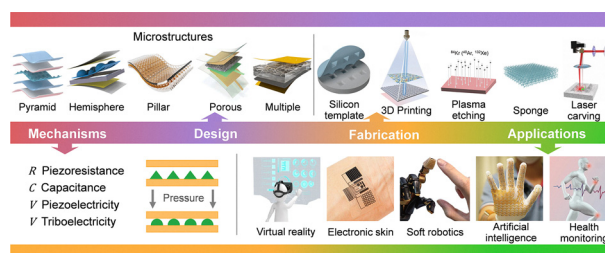
Zhipeng Hu, Xinyi Liu, Xiyang Cheng, Yilin Song, Ziqi Jia, Pengfei Zhao,\* Ziyu Lv, Yongbiao Zhai, Loganathan Veeramuthu, Su-Ting Han, Vellaisamy A. L. Roy, Chi-Ching Kuo\* and Ye Zhou\*



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### Microstructure engineering for tactile-enabled embodied intelligence

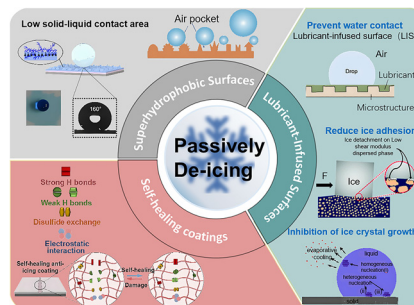
Hao Pang, Qilin Hua\* and Guozhen Shen\*



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### Recent research progress on photothermal icephobic materials from fabrication to application

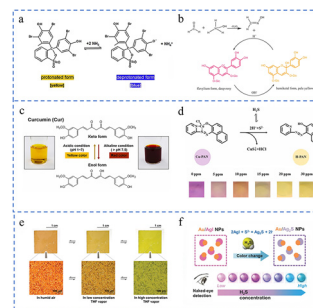
Benqi Shi, Mengwei Li, Guopeng Chen, Shuo Li, Rui Song,\* Xiaofeng Zheng, Qiang He\* and Shangzhen Xie\*



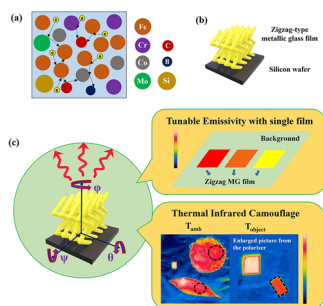
3278

### From material design to smart sensing: recent advances in colorimetric sensors for gas monitoring

Hao Zhang, Jiuyi Li, Chengyu Zhang, Xuyang Duan, Wenbo Shi, Lina Zhou, Chunqing Yang, Yan Wu and Dongzhi Zhang\*



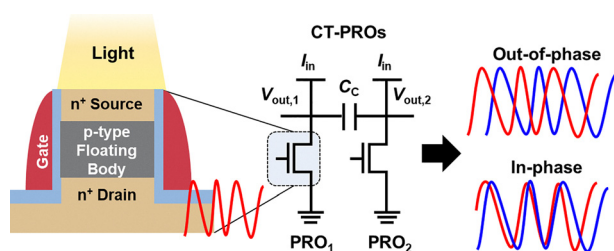
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### Zigzag-type metastructures of metallic glass with precisely tunable emissivity for thermal infrared camouflage technology

Wei-Han Wang, Yu-Ching Shih, Chia-Hsuan Lee and Hsuen-Li Chen\*

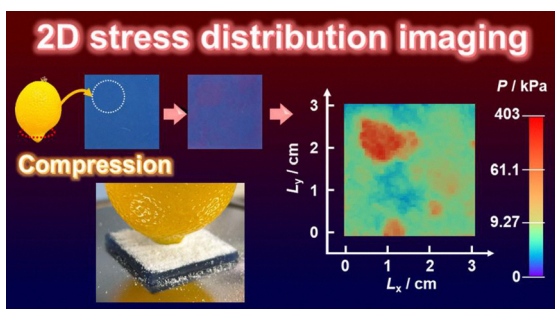
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### Uncovering a third function of the transistor beyond switching and amplification: coupled photo-responsive oscillators for in-sensor computing

Seong-Yun Yun, Joon-Kyu Han and Yang-Kyu Choi\*

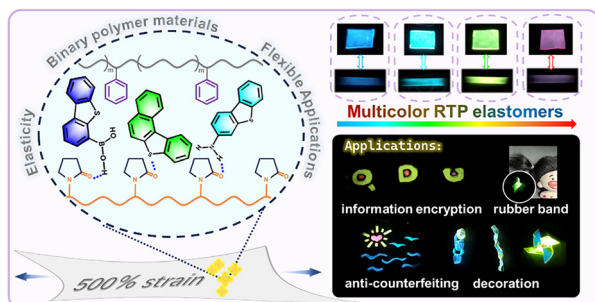
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### 2D stress-distribution imaging using 3D transparent stimulus-responsive color-changing rubber

Hazuki Yamanaka, Hiroaki Imai, Syuji Fujii\* and Yuya Oaki\*

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### Multicolor room temperature phosphorescence in dibenzothiophene derivative-doped elastic binary polymers for multi-step encryption displays

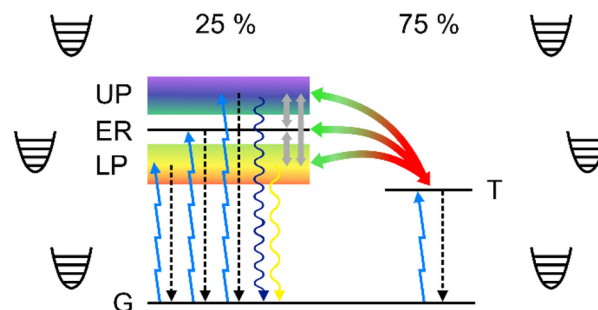
Qian Wang, Yan-Yu Xue, Lu-Lu Liu, Fei-Fei Zhao, Yu-Juan Ma,\* Jin-Hua Li\* and Guo-Ming Wang



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### Impact of light–matter coupling strength on the efficiency of microcavity OLEDs: a unified quantum master equation approach

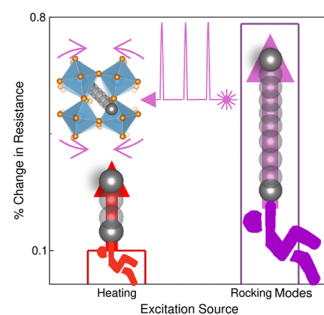
Olli Siltanen,\* Kimmo Luoma and Konstantinos S. Daskalakis



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### Correlated terahertz phonon–ion interactions control ion conduction in a solid electrolyte

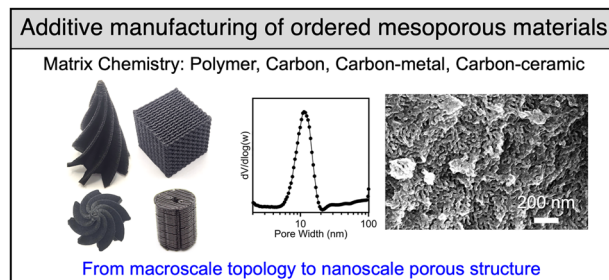
Kim H. Pham, Kiarash Gordiz, Natan A. Spear, Amy K. Lin, Jonathan M. Michelsen, Hanzhe Liu, Daniele Vivona, Geoffrey A. Blake, Yang Shao-Horn, Asegun Henry, Kimberly A. See and Scott K. Cushing\*



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### Architecting ordered mesoporous materials via additive manufacturing

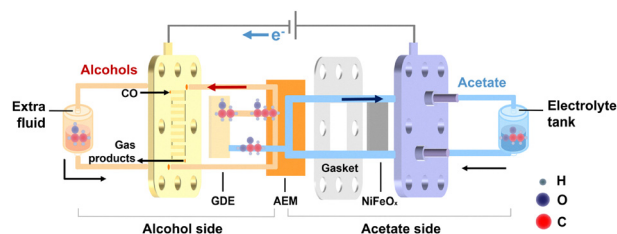
Anthony Griffin, Isaac Bauer, Paul Smith, Yizhi Xiang and Zhe Qiang\*



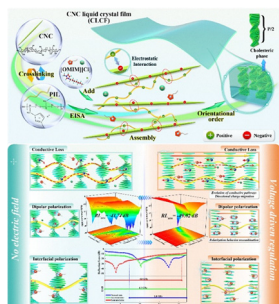
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### Fluids at electrode/membrane interfaces suppress alcohol crossover in CO electroreduction

Haoxiang Bai, Jundong Wang and Yuhang Wang\*



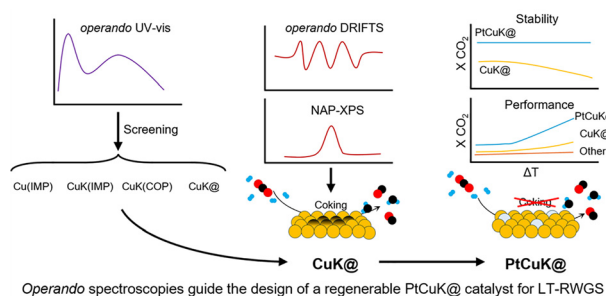
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### Bio-derived ionic coacervate-engineered cellulose liquid crystal films for electrically reconfigurable microwave absorption

Haoyuan Li, Yongjuan Wang, Zhonghui Li, Shuang Liang, Yuming Zhou, Wenhua Gao and Man He\*

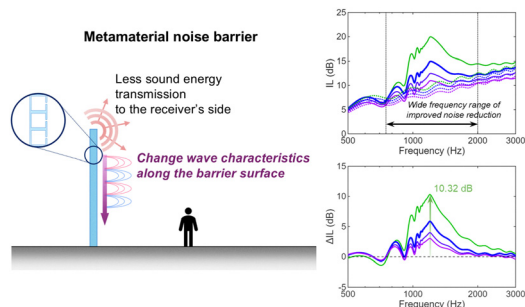
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### Spectroscopy-guided optimization of copper-based catalysts for low-temperature CO<sub>2</sub> recycling to CO

Rubén Blay-Roger,\* Vincent Blay, Guillermo Torres Sempere, Nuria García-Moncada, Tomas Ramirez Reina, Bertrand Lacroix, Luis F. Bobadilla and José A. Odriozola

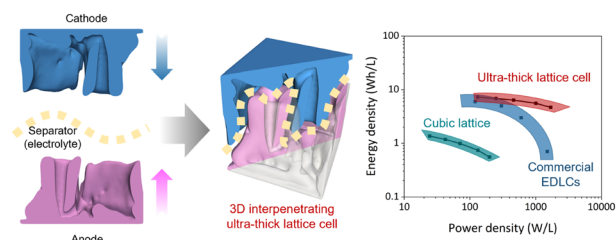
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### Harnessing diffraction with metamaterial noise barriers for enhanced sound attenuation

Jieun Yang\* and Pyung-Sik Ma\*

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### Ultra-thick three-dimensional interpenetrating graphene electrode architectures for high volumetric density energy storage

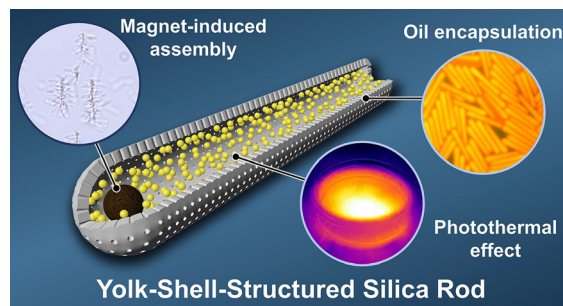
Zhen Wang, Hanyu Li, Daniel Hawthorne, Zhongzheng Mao, David Hahn, Nicholas R. Cross, Giovanna Bucci, Thomas Roy,\* Marcus A. Worsley\* and Xiaoyu (Rayne) Zheng\*



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### Structurally engineered yolk–shell mesoporous silica rods with liquid and nanoparticle cargo

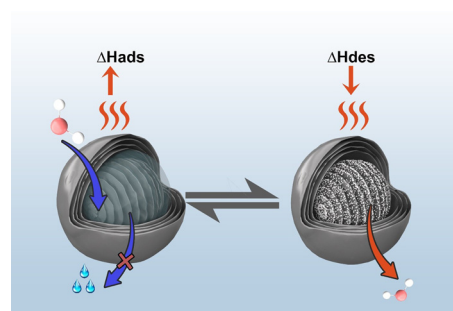
Hyun-Seok Choe, Geun Young Kim, Jeong-Min Park, Suyoung Jeong, Han-Gil Kim, Seon Yeong Chae, Suck Won Hong and Jae-Hyuk Kim\*



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### Structurally tailored nanocomposite sorbent enabling high-energy-density thermochemical storage in e-thermal banks for electric vehicle applications

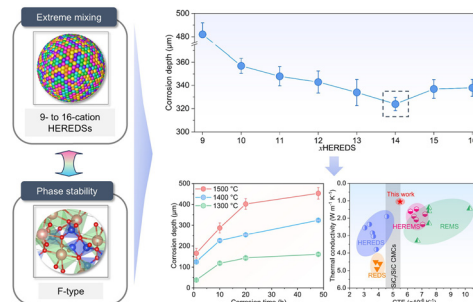
Waseem Aftab,\* Muhammad Khurram, Qiqiu Huang, Dacheng Li, Muhammad Maqbool, Jiatong Jiang and Yongliang Li\*



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### Extreme-mixing-boosted CMAS corrosion resistance and thermophysical properties in high-entropy rare-earth disilicates

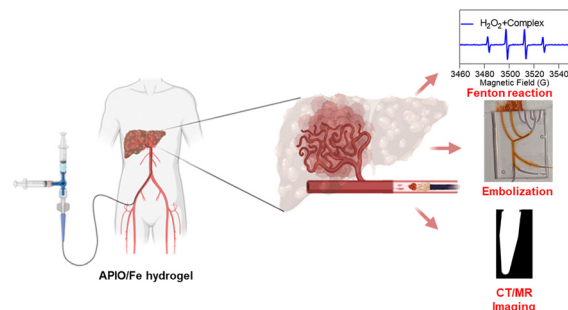
Yang Liu, Yiwen Liu, Lei Zhuang,\* Hulei Yu and Yanhui Chu\*



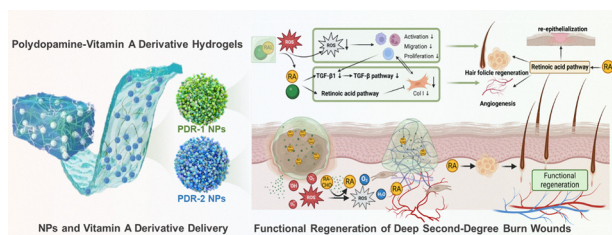
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### Injectable hyaluronic acid-based hydrogels with carbon dots and an iron complex for embolization

Minyoung Jin,\* Sanghee Lee, Yuhyeon Na, Hayoon Jeong, Dong-Hyun Kim and Kun Na\*



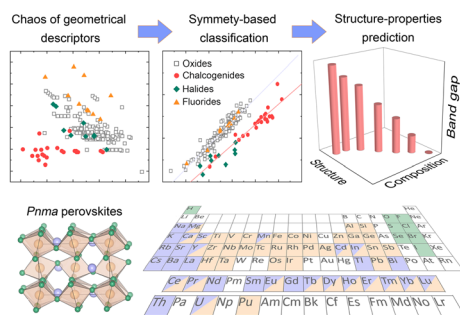
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### Bioadhesive polydopamine-vitamin A derivative hydrogels reprogram the wound microenvironment for scarless wound healing and hair follicle regeneration

Kang Wang, Hengjie Zhang, Mengxin Wang, Zhengyong Li, Wu Wu, Pengcheng Liu, Ruiqi Liu, Zhipeng Gu, Yiwen Li\* and Zhenyu Zhang\*

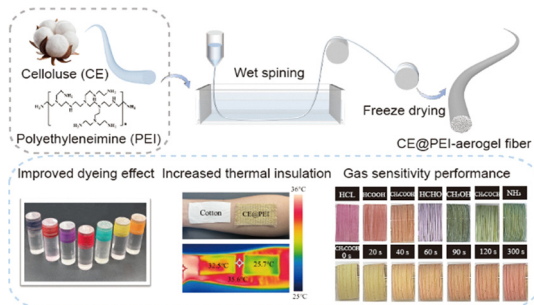
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### Chemical diversity encoded in symmetry: universal distortion rules and design principles for perovskites

Mikhail V. Talanov\* and Ekaterina G. Trotsenko

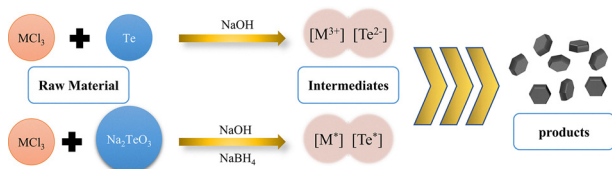
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### Colorful aerogel fibers enabling functional textiles for thermal insulation and harmful-gas visualization

Peiqi Liu, Xinya Zheng, Yajie Shu, Yongming Cui, Yirong Wang, Jinming Zhang,\* Jinfeng Wang,\* Jun Zhang and Xungai Wang

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### New insights into bonding in phase-change materials from ion-driven synthesis

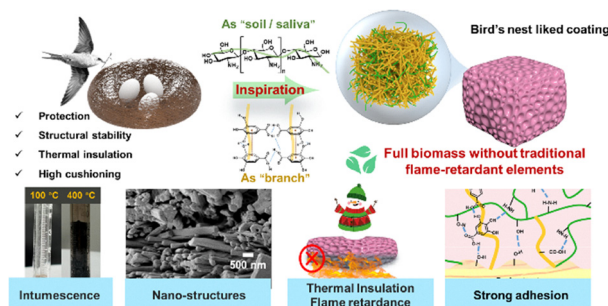
Zhen Zhang, Xuanguang Zhang, Bin Liu, Jian Zhou, Stephen R. Elliott and Zhimei Sun\*



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### A bird nest-inspired and fully biomass coating with an interpenetrating fibrous network for thermal insulation and universal fire retardancy

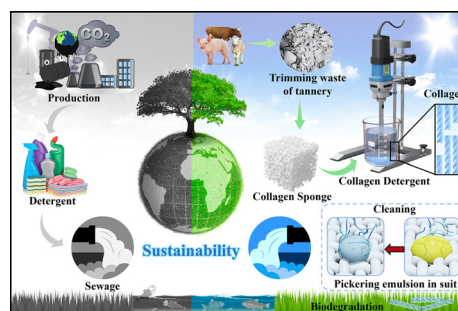
Xue Gou, Ting Wang,\* Yong-Qi Liang, Jiajiamo Luo, Chengxu Xu, Jinni Deng, Zhi-Cheng Fu, Wenli An and Ming-Jun Chen\*



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### A surfactant-free, eco-sustainable detergent utilizing collagen Pickering emulsions

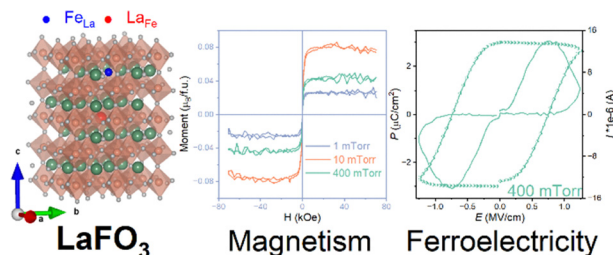
Yifan Yi, Cuicui Ding,\* Kuan Cheng, Yunzhe Ding, Jingyi Li, Jingjing Yu and Min Zhang\*



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### Defect-engineered ferroelectricity and magnetoelectric coupling in LaFeO<sub>3</sub> thin films

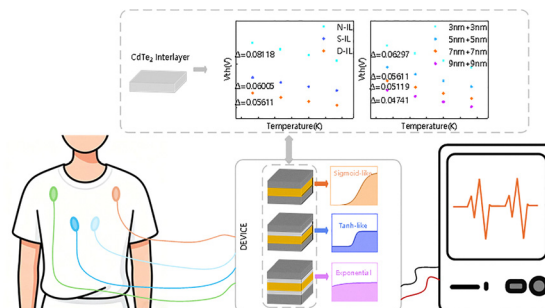
Fengbo Yan, Vladislav Korostelev, Houlin Zhou, Guo Tian, Huixin Wang, Muhan Tang, Hao Zhang, Yao Chen, Xiaolei Sun,\* Shuai Ning\* and Feng Luo\*



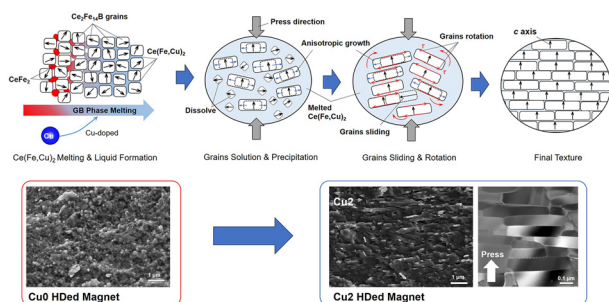
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### A thermally engineered NbO<sub>x</sub> memristor with CdTe<sub>2</sub> interlayers for high-accuracy ECG arrhythmia detection

Yunlai Zhu, Chaotong Xie, Zhongren Ye, Tao Jiang, Yong Zhang, Ke Wang, Xiaoling Wu, Haotian Tang, Junjie Zhang, Yang Hu, Ying Zhu, Zhe Feng,\* Zuyu Xu, Lihua Xu, Wendong Lu, Zuheng Wu\* and Yuehua Dai\*



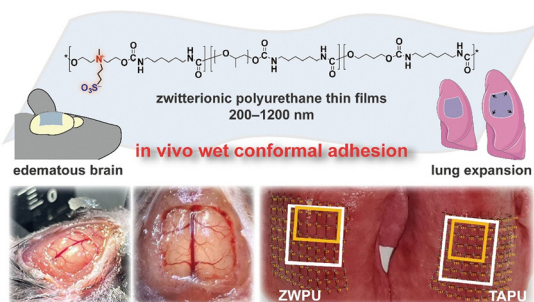
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### Regulation of the grain boundary CeFe<sub>2</sub> phase via Cu addition for anisotropic Ce–Fe–B magnet fabrication

Guang Yu, Shuainan Xu, Xuefeng Liao, Bang Zhou, Hongya Yu, Xichun Zhong and Zhongwu Liu\*

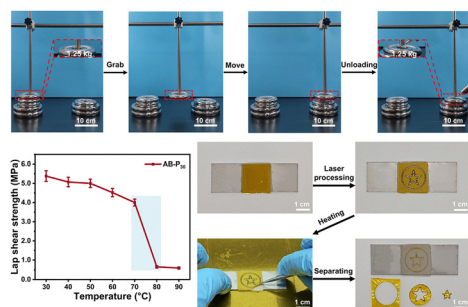
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### Zwitterionic polyurethane thin films enabling wet conformal adhesion to dynamic tissues

Mengyao Zhong, Xingyu Liu, Xiuqiang Li, Yu Sun, Shaofeng Liu, Yao Liang, Fanglian Yao, Junjie Li, Linfang Li\* and Hong Zhang\*

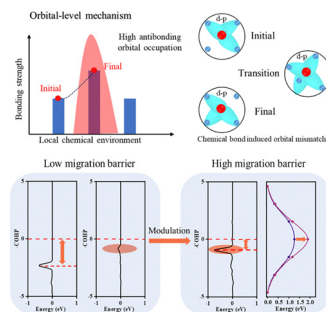
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### Thermoreversible adhesives with precisely temperature-controlled detachment enabled by temperature-responsive crystalline domains

Wenwei Yang, Yubing Fu, Siyu Gan, Xueling Yan, Liwei Lu, Xinyu Chen and Lan Liu\*

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### Orbital-level engineering of bonding networks to modulate halogen migration in lead-free double perovskites

Qianglong Fang, Mingao Hu, Xinying Gao, Yilei Wu, Qun Ji, Ming-Gang Ju\* and Jinlan Wang

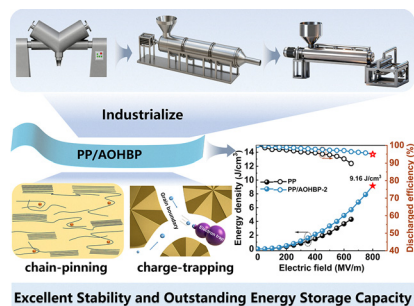


## COMMUNICATIONS

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### Synergistic enhancement of high-temperature stability and energy-storage performance in polypropylene dielectric films *via* molecular trap engineering

Cheng Yao, Dong Ma, Jingchun Hou, Shaobo Tan, Jie Xiong, Weichen He, Jingqi Zhang, Meirong Zhang,\* Changsheng Ji\* and Zhicheng Zhang\*



## CORRECTION

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### Correction: Metabolically engineered bacteria as light-controlled living therapeutics for anti-angiogenesis tumor therapy

Xingang Liu, Min Wu, Meng Wang, Yukun Duan, ChiUyen Phan, Guobin Qi, Guping Tang\* and Bin Liu\*

