

Materials Horizons

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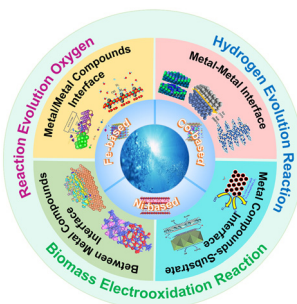
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Recent advances in interface engineering of Fe/Co/Ni-based heterostructure electrocatalysts for water splitting

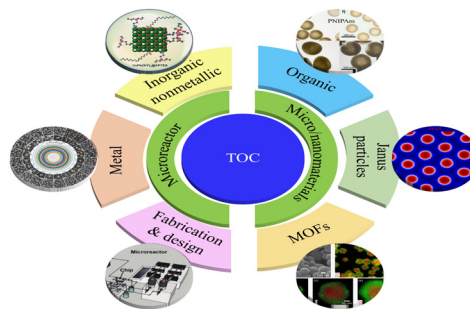
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Microreactor-based micro/nanomaterials: fabrication, advances, and outlook

Jianfeng Ran, Xuxu Wang, Yuanhong Liu, Shaohua Yin,* Shiwei Li* and Libo Zhang*



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Building and designing systems from the molecular level

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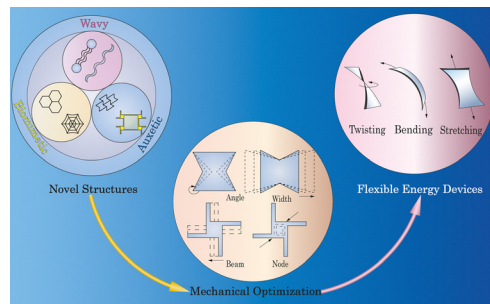


REVIEWS

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Structural engineering of electrodes for flexible energy storage devices

Yuchu Sun and Woon Gie Chong*

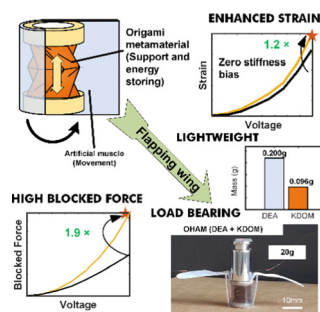


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Hybrid artificial muscle: enhanced actuation and load-bearing performance *via* an origami metamaterial endoskeleton

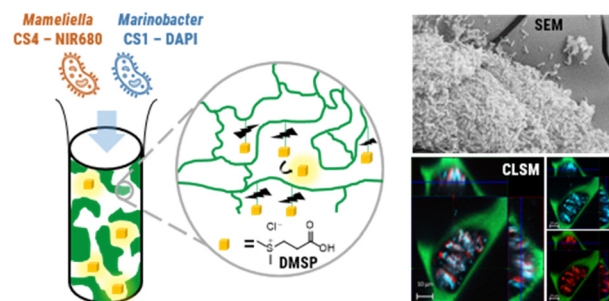
Boyuan Tian, Zhimiao Yan, Qiang Li, Xinyu Hu and Ting Tan*



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Dimethylsulfonylpropionate decorated cryogels as synthetic spatially structured habitats of marine bacterial communities

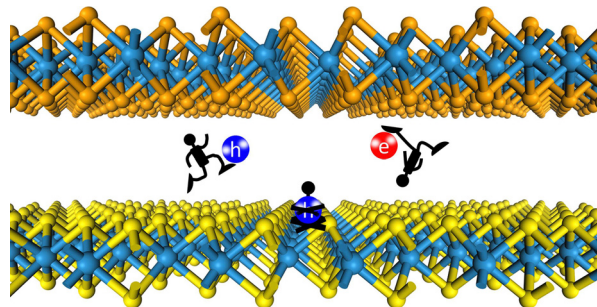
Florian Behrendt, Yun Deng, David Pretzel, Steffi Stumpf, Nicole Fritz, Michael Gottschaldt, Georg Pohnert* and Ulrich S. Schubert*



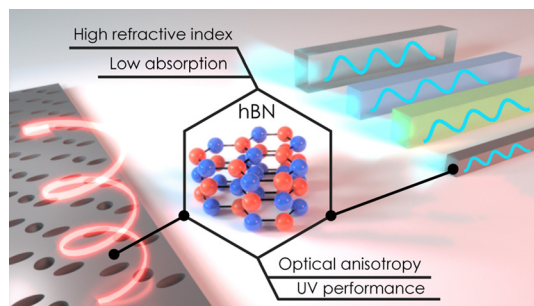
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The effects of intercalated environmental gas molecules on carrier dynamics in WSe_2/WS_2 heterostructures

Yanxue Zhang, Hongsheng Liu, Yanyan Zhao, Jiaqi Lin,* Yizhen Bai, Jijun Zhao* and Junfeng Gao*



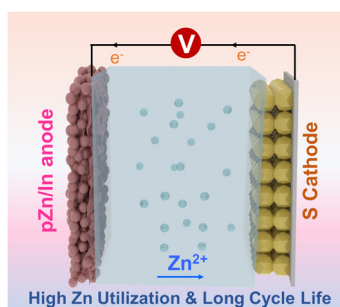
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Hexagonal boron nitride nanophotonics: a record-breaking material for the ultraviolet and visible spectral ranges

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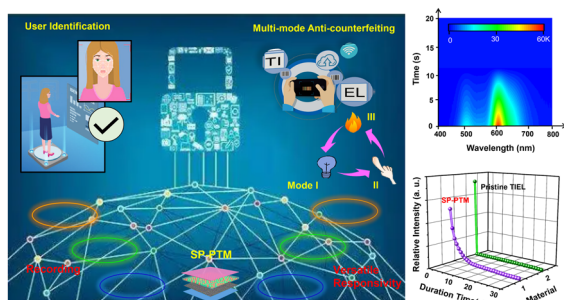
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Rational design of zinc powder anode with high utilization and long cycle life for advanced aqueous Zn–S batteries

Jianbo Li, Zexiao Cheng, Zhen Li* and Yunhui Huang*

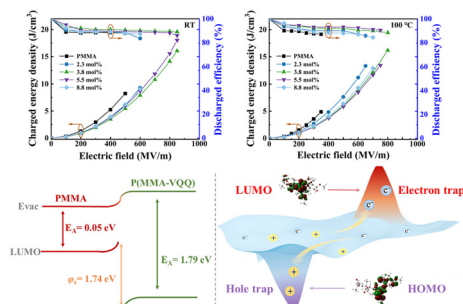
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Persistent triboelectrification-induced electroluminescence for self-powered all-optical wireless user identification and multi-mode anti-counterfeiting

Li Su, Zihan Wang, Chengyue Lu, Wenbo Ding, Yong Zhao and Yunlong Zi*

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Depressing relaxation and conduction loss of polar polymer materials by inserting bulky charge traps for superior energy storage performance in high-pulse energy storage capacitor applications

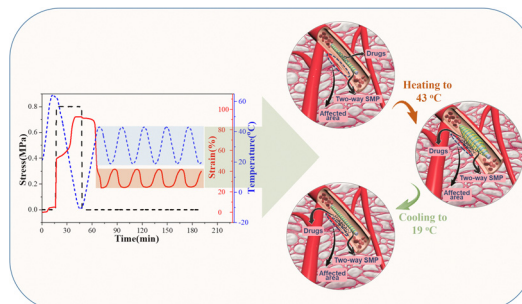
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Narrow response temperature range with excellent reversible shape memory effect for semi-crystalline networks as soft actuators

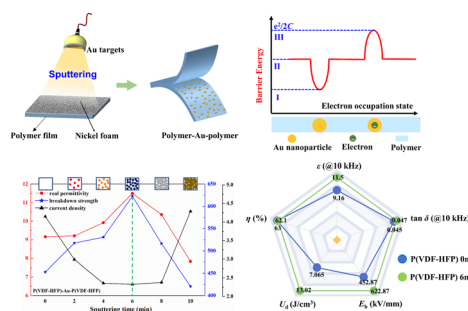
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Achieving remarkable energy storage enhancement in polymer dielectrics via constructing an ultrathin Coulomb blockade layer of gold nanoparticles

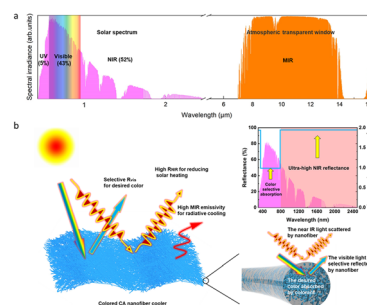
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Selective spectral absorption of nanofibers for color-preserving daytime radiative cooling

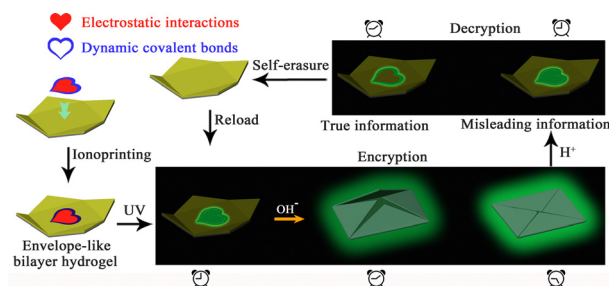
Xiangshun Li, Huilin Xu, Yuchen Yang, Faxue Li, Seeram Ramakrishna, Jianyong Yu, Dongxiao Ji* and Xiaohong Qin*



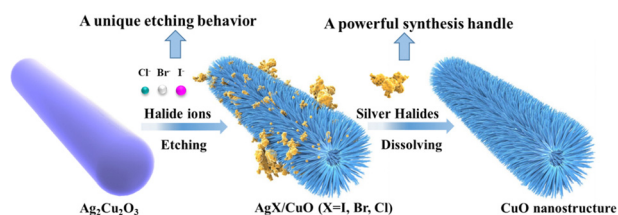
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A 3D multistage information encryption platform with self-erasure function based on a synergistically shape-deformable and AIE fluorescence-tunable hydrogel

Caixia Yang,* Hangxiang Xiao, Li Tang, Zichen Luo, Ying Luo, Ningbo Zhou, Enxiang Liang,* Guoxiang Wang* and Jianxin Tang*



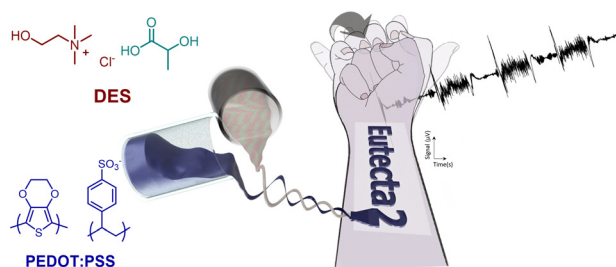
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Elucidating the exceptional halide ion etching of bimetallic Ag–Cu oxides for efficient adsorption and porous nanostructure formation

Meng Zhang, Fuzhu Liu, Hongliang Yang, Zhanglian Xu,* Junjie Wang and Yutong Gong*

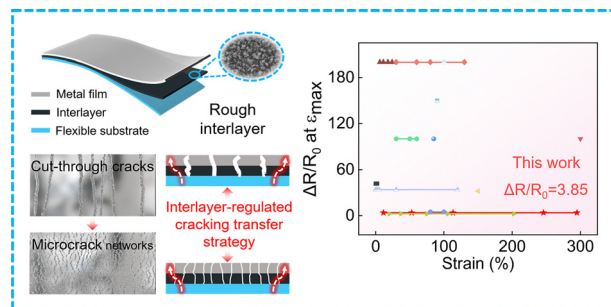
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Direct ink writing of PEDOT eutectogels as substrate-free dry electrodes for electromyography

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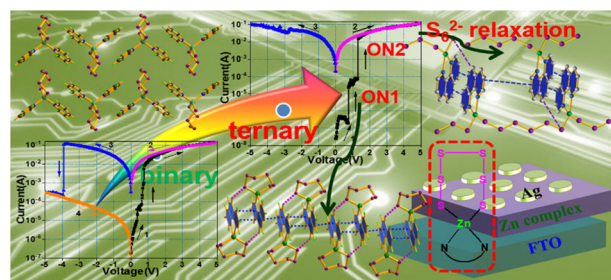
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Switching ultra-stretchability and sensitivity in metal films for electronic skins: a pufferfish-inspired, interlayer regulation strategy

Tianming Sun, Bin Feng, Jinpeng Huo, Yu Xiao, Jin Peng, Zehua Li, Wengan Wang, Lei Liu, Guisheng Zou* and Wenxian Wang*

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Switching the memory behaviour from binary to ternary by triggering S_6^{2-} relaxation in polysulfide-bearing zinc-organic complex molecular memories

Pan-Ke Zhou, Xiao-Li Lin, Mun Yin Chee, Wen Siang Lew, Tao Zeng, Hao-Hong Li,* Xiong Chen,* Zhi-Rong Chen and Hui-Dong Zheng*

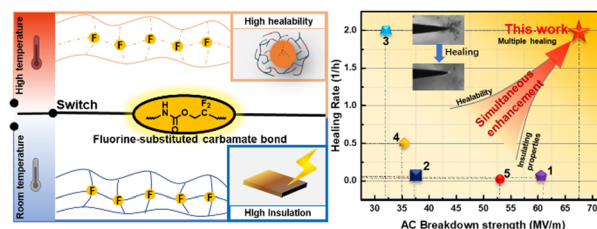


COMMUNICATIONS

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Self-healing of electrical damage in insulating robust epoxy containing dynamic fluorine-substituted carbamate bonds for green dielectrics

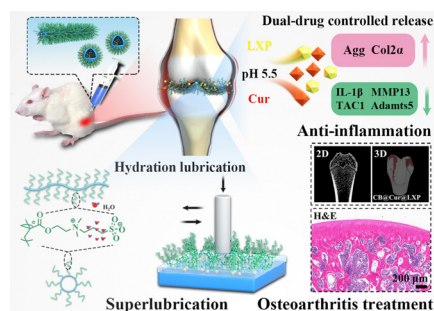
Wenjia Sun, Jiazhu Xu, Jianhong Song, Yue Chen, Zepeng Lv, Yonghong Cheng and Lei Zhang*



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A cyclic brush zwitterionic polymer based pH-responsive nanocarrier-mediated dual drug delivery system with lubrication maintenance for osteoarthritis treatment

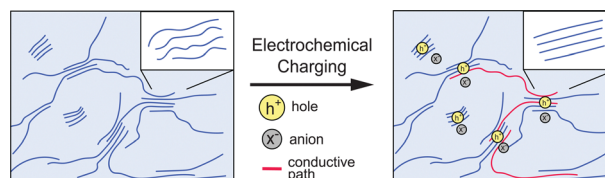
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Role of aggregates and microstructure of mixed-ionic–electronic-conductors on charge transport in electrochemical transistors

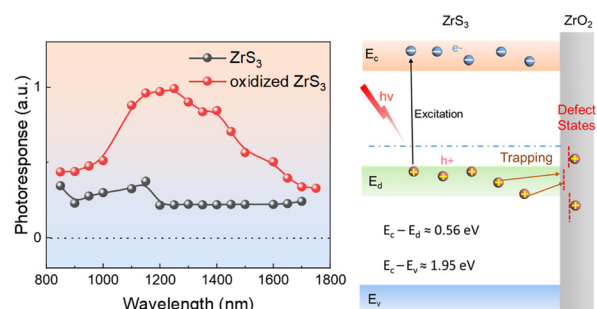
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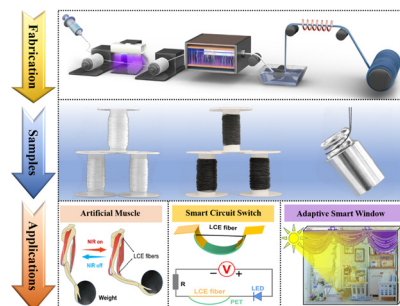
Synergistic effects of extrinsic photoconduction and photogating in a short-wavelength ZrS₃ infrared photodetector

Yiye Yu, Meng Peng, Fang Zhong,* Zhen Wang, Xun Ge, Hao Chen, Jiayang Guo, Yang Wang, Yue Chen, Tengfei Xu, Tiange Zhao, Ting He, Kun Zhang, Feng Wu,* Changqing Chen,* Jiangnan Dai and Weida Hu



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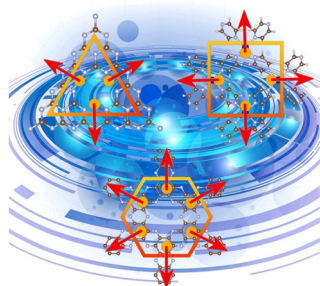
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Scalable functionalized liquid crystal elastomer fiber soft actuators with multi-stimulus responses and photoelectric conversion

Dingsheng Wu, Yanan Zhang, Hanrui Yang, Anfang Wei, Yuxin Zhang, Alfred Mensah, Rui Yin, Pengfei Lv,* Quan Feng* and Qufu Wei*

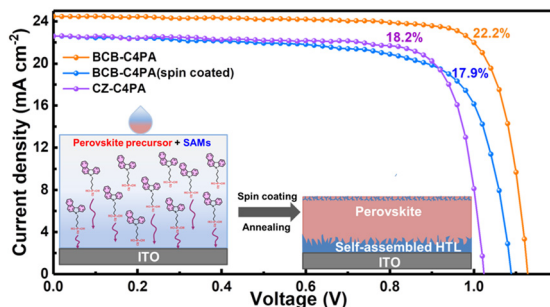
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Highly degenerate 2D ferroelectricity in pore decorated covalent/metal organic frameworks

Lei Zhang, Cheng Tang, Stefano Sanvito and Aijun Du*

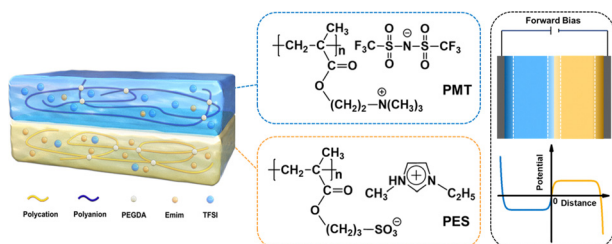
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Dynamic self-assembly of small molecules enables the spontaneous fabrication of hole conductors at perovskite/electrode interfaces for over 22% stable inverted perovskite solar cells

Wanhai Wang, Kun Wei, Li Yang, Jidong Deng, Jinbao Zhang* and Weihua Tang*

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A novel bilayer heterogeneous poly(ionic liquid) electrolyte for high-performance flexible supercapacitors with ultraslow self-discharge

Keyi Dong, Yanan Liu, Zilin Chen, Tian Lv, Weiyang Tang, Shaokui Cao and Tao Chen*

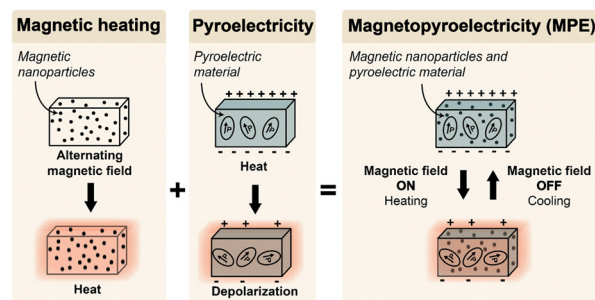


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The magnetopyroelectric effect: heat-mediated magnetoelectricity in magnetic nanoparticle-ferroelectric polymer composites

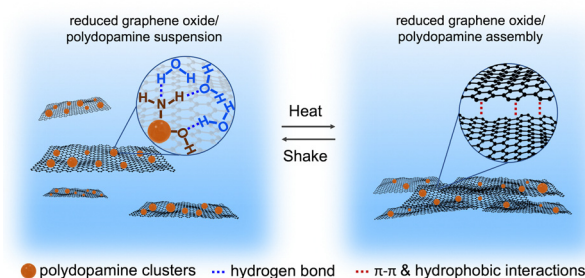
Joaquin Llaser-Wintle, Jan Renz, Lukas Hertle, Andrea Veciana, Denis von Arx, Jiang Wu, Pere Bruna, Marija Vukomanovic, Josep Puigmartí-Luis, Bradley J. Nelson, Xiang-Zhong Chen* and Salvador Pané*



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Supramolecular temperature responsive assembly of polydopamine reduced graphene oxide

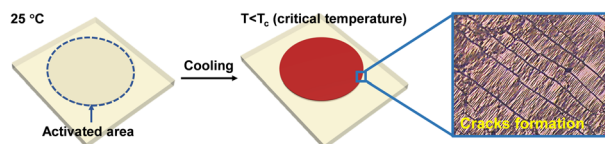
Yiwen Chen, Thomas Szkopek and Marta Cerruti*



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A cold-responsive liquid crystal elastomer provides visual signals for monitoring a critical temperature decrease

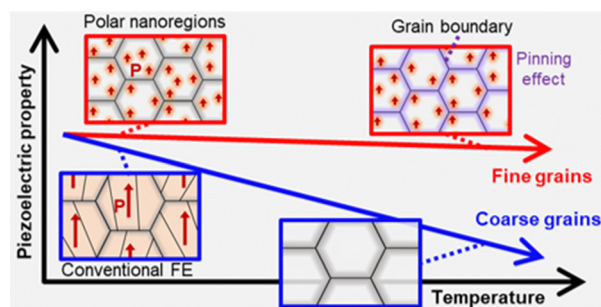
Yuanyuan Zhan, Dirk J. Broer, Junyu Li, Jiuzhi Xue and Danqing Liu*



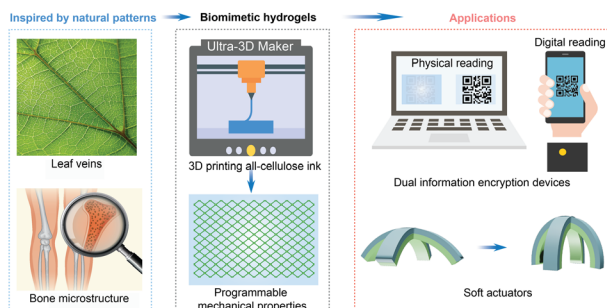
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Enhanced thermal stability by short-range ordered ferroelectricity in $K_{0.5}Na_{0.5}NbO_3$ -based piezoelectric oxides

Soo-Yoon Hwang, Gyoung-Ja Lee, Yuzhao Qi, Michael Abraham Listyawan, Kyung Song, Youngho Kang, Jungho Ryu, Xiaoyan Lu, Min-Ku Lee* and Si-Young Choi*



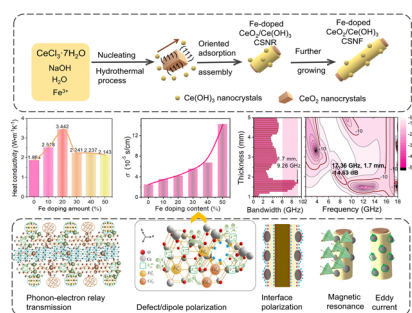
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An information encrypted heterogeneous hydrogel with programmable mechanical properties enabled by 3D patterning

Yuhang Ye, Zhengyang Yu, Yifan Zhang and Feng Jiang*

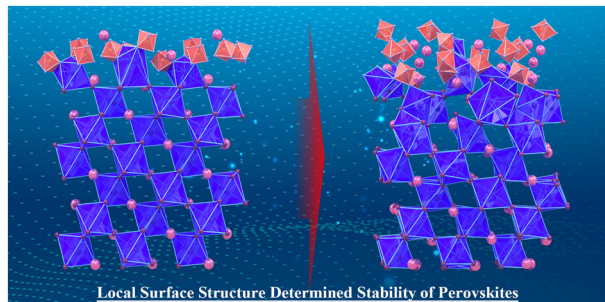
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Synchronously boosting microwave-absorbing and heat-conducting capabilities in CeO₂/Ce(OH)₃ core-shell nanorods/nanofibers via Fe-doping amount control

Xinxin Wang, Feifei You, Qibin Yao, Kairui Wang, You Liao, Guoxiu Tong,* Xiaojuan Wang, Tong Wu* and Wenhua Wu

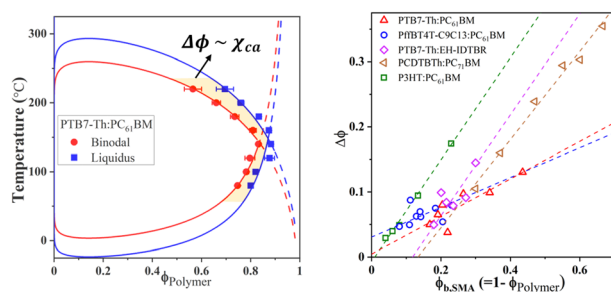
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Are formation and adsorption energies enough to evaluate the stability of surface-passivated tin-based halide perovskites?

Yapeng Zheng, Zhi Fang, Minghui Shang,* Qian Sun, Xinmei Hou* and Weiyou Yang*

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Unveiling re-entrant phase behavior and crystalline-amorphous interactions in semi-conducting polymer:small molecule blends

Zhengxing Peng and Harald Ade*



CORRECTION

2706

Correction: Elucidating the role of multivalency, shape, size and functional group density on antibacterial activity of diversified supramolecular nanostructures enabled by templated assembly

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