

# Journal of Materials Chemistry C

Materials for optical, magnetic and electronic devices

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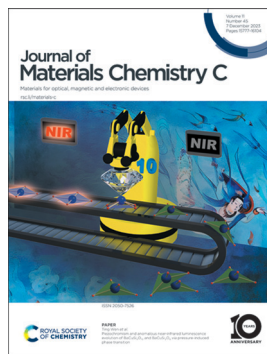
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### Cover

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### Inside cover

See Ting Wen *et al.*, pp. 15833–15840. Image reproduced by permission of Ke Liu from *J. Mater. Chem. C*, 2023, 11, 15833.

## EDITORIALS

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**2023 Journal of Materials Chemistry Lectureship runners-up:** Dr Kwabena Bediako, University of California, Berkeley, USA and Dr Laure Biniek, Institut Charles Sadron, CNRS – Strasbourg, France



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**2023 Journal of Materials Chemistry Lectureship winner:** Dr Jovana Milić, University of Fribourg, Switzerland



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# Journal of Materials Chemistry C

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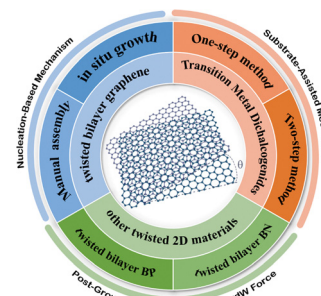


## REVIEW

15793

## Small twist, big miracle—recent progress in the fabrication of twisted 2D materials

Weijie Ma, Qing Zhang, Lin Li,\* Dechao Geng\* and Wenping Hu

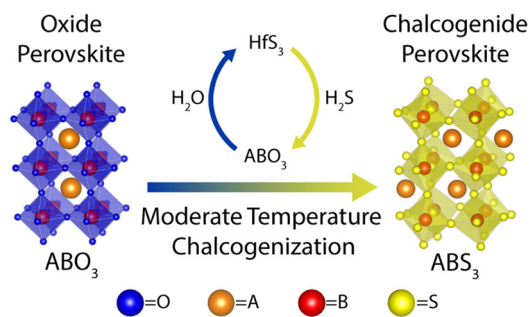


## COMMUNICATION

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## Moderate temperature sulfurization and selenization of highly stable metal oxides: an opportunity for chalcogenide perovskites

Shubhanshu Agarwal, Jonathan W. Turnley, Apurva A. Pradhan and Rakesh Agrawal\*

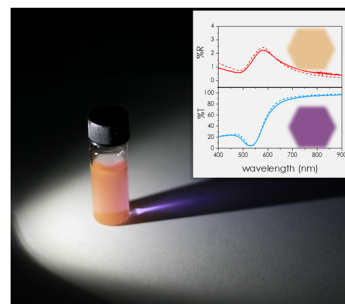


## PAPERS

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## A complete explanation of the plasmonic colours of gold nanoparticles and of the bichromatic effect

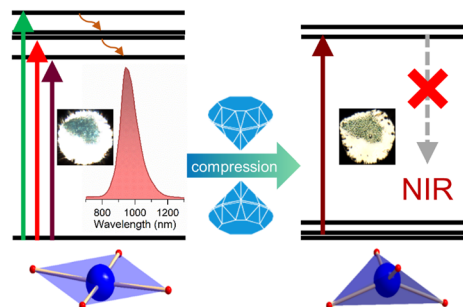
Olivier Pluchery,\* Yoann Prado and William Watkins



15833

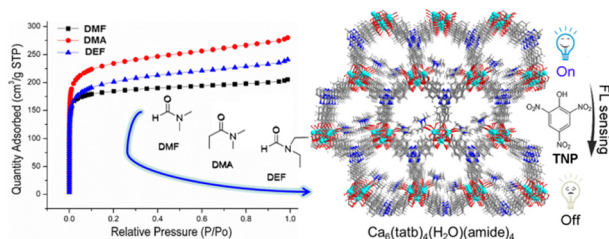
## Piezochromism and anomalous near-infrared luminescence evolution of BaCuSi<sub>4</sub>O<sub>10</sub> and BaCuSi<sub>2</sub>O<sub>6</sub> via pressure-induced phase transition

Ke Liu, Chen Li, Dequan Jiang, Yingying Ma, Ting Wen,\* Binbin Yue and Yonggang Wang



## PAPERS

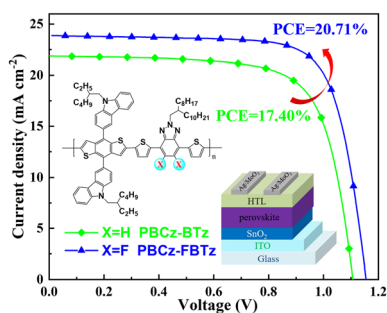
15841



### The role of terminal coordinated amides in a series of Ca-tatb frameworks: pore size regulation and fluorescence sensing tunability

Bin Tan, Xiu-Ze Hei, Yang-Peng Lin, Zhao-Feng Wu\* and Xiao-Ying Huang\*

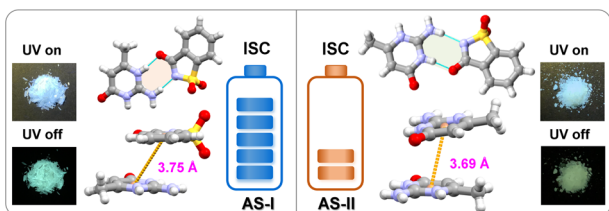
15848



### Efficiency enhancement of dopant-free perovskite solar cells by employing fluoro-substituted electron donor–electron acceptor type polymeric hole-transporting materials

Yunxiang Chen,\* Xuelin Wang, Guofeng You, Simei Huang and Hongyu Zhen\*

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### Color-tunable persistent luminescence in molecular polymorphs of ionic co-crystals

Yumin Liu, Yajuan Ma, Xiaoyu Fang, Tianhong Chen, Fei Nie and Dongpeng Yan\*

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### Light blue rigid excited-state intramolecular proton transfer organic semiconductor laser chromophores

Ilene Allison, Mashashi Mamada,\* Atul Shukla, Sarah K. M. McGregor, Ras Baizureen Roseli, Innes Gale, Vijay P. Rahane, Evan G. Moore, Elizabeth H. Krenske, Nidhi Jain, Chihaya Adachi, Ebinazar B. Namdas\* and Shih-Chun Lo\*

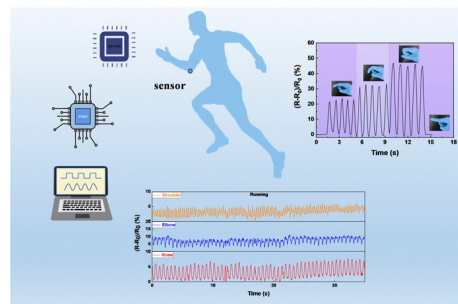


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15873

**Stretchable conductive hydrogels integrated with microelectronic devices for strain sensing**

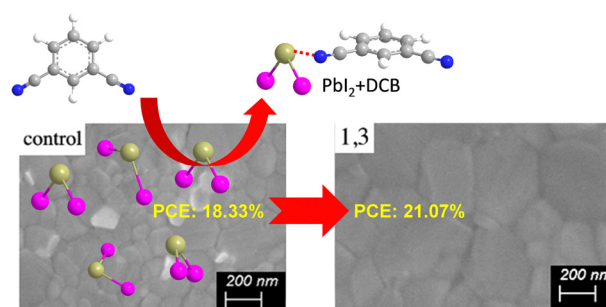
Xuanshuo Zhang, Jingfei Zhang, Wangwen Liao, Dehui Zhang, Yongqiang Dai, Chen Wu, Jinxiu Wen\* and Wei Zeng\*



15881

**Dicyanobenzene passivated perovskite solar cells with enhanced efficiency and stability**

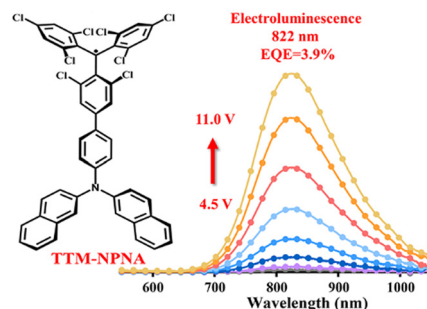
Merlan Nurzhanov, Avi Mathur, Yaoyao Li, Saikiran Khamgaonkar, Sung Jae Jeon, Vivek Maheshwari and Yuning Li\*



15892

**Efficient radical-based near-infrared organic light-emitting diodes with an emission peak exceeding 800 nm**

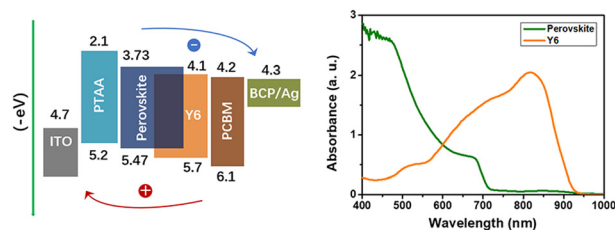
Kuo Lv, Ming Zhang and Feng Li\*



15898

**High-performance wide-bandgap perovskite solar cells with an enhanced photon-to-electron response of near-infrared wavelengths**

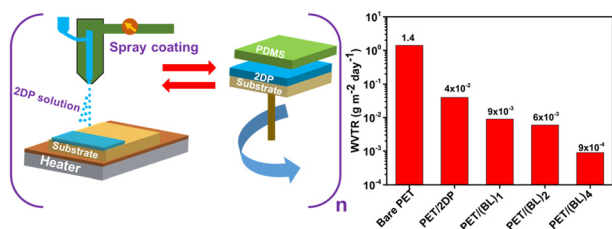
Zhihai Liu, Lei Wang, Xiaoyin Xie,\* Chongyang Xu,\* Chao Zhang and Ping Chen\*





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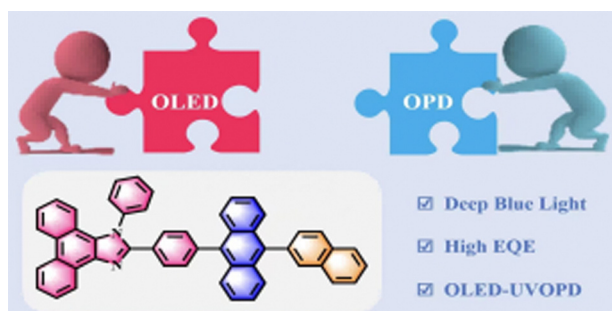
15907



### Self-cleaning and fully polymer-based super-moisture-resistant gas barrier coating films with 2D polymers for flexible electronic devices and packaging applications

Sadiq Mahmood, Nadeem Ahamad, Chandra Kant, Amir Khan, Pu-Wei Wu, Wen-Bin Jian, Chih Wei Chu, Monica Katiyar\* and Hong-Cheu Lin\*

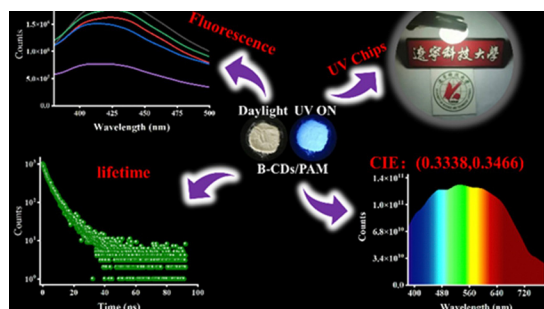
15918



### Applications of hot-exciton anthracene and imidazole derivatives in integrated organic blue-emitting diodes and ultraviolet photodetectors

Qiao Luo, Yannan Gao, Huixia Xu,\* Song Zhao, Wenjian Dong, Yanqin Miao, Yating Wang, Hua Wang and Junsheng Yu\*

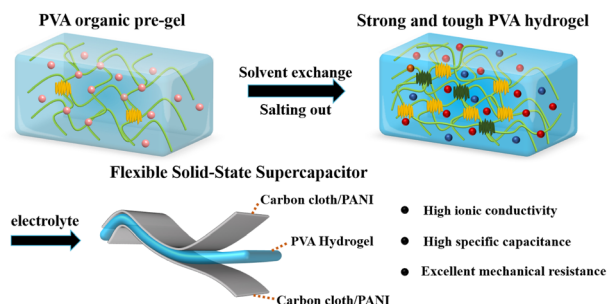
15926



### White light emitting diodes with a high colour rendering index of 98.3 using blue emissive carbon dots

Lu Zhou, Huiyong Wang, Hongmei Yu,\* Eric Amador, Jiajia Xue, Shaoyan Wang\* and Wei Chen\*

15934



### Strong and tough conductive PVA hydrogels based on the synergistic effect of acetic acid induction and salting-out for flexible solid-state supercapacitors

Weifeng Zhong, Yufang Song, Jiwei Chen, Shuai Yang, Lihao Gong, Dongjian Shi, Weifu Dong and Hongji Zhang\*

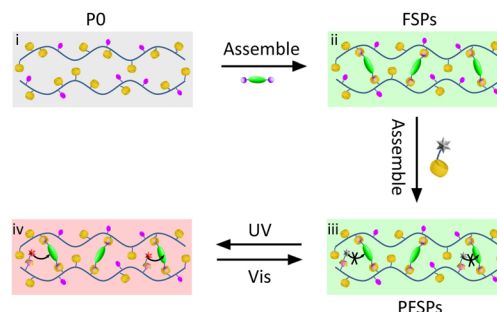


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### Dual host–guest interaction-mediated photoswitchable fluorescent supramolecular polymers for anti-counterfeiting and encryption

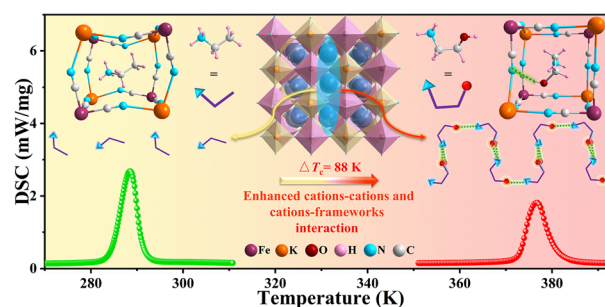
Hong Wang, Jia Tang, Haitao Deng, Yong Tian, Zhong Lin, Jiayi Cui and Jian Chen\*



15952

### Hydrogen-bonding engineering in a 3D cyano-bridged double-perovskite ferroelastic greatly improves the phase-transition temperature

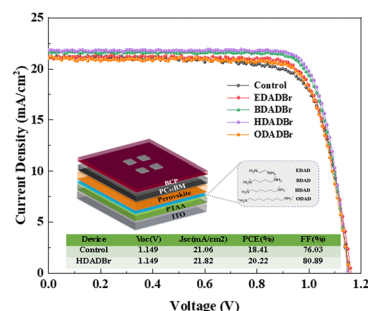
Meng-Zhen Li, Zhao-Hong Chen, Sheng-Qian Hu, Jun-Si Zhou, Luan-Ying Ji and Xiao-Gang Chen\*



15959

### Increasing the wettability and reducing excess $\text{PbI}_2$ using diamine hydrobromides with different lengths at the buried interface of the 3D perovskite film

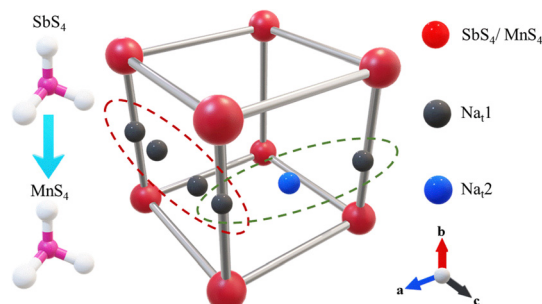
Ning Meng, Xiaofeng Huang, Xiaomin Huo, Zhenqun Liang, Dong Wei, Suling Zhao, Bo Qiao, Zhiqin Liang, Zheng Xu and Dandan Song\*



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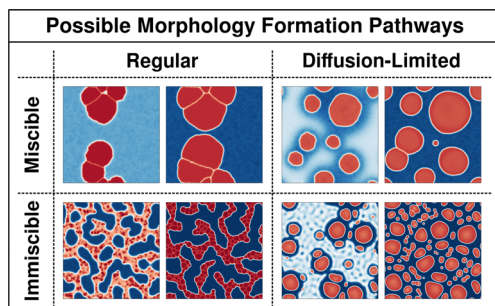
### Excellent sodium ion conductivity and air stability of manganese-substituted $\text{Na}_3\text{SbS}_4$ solid electrolytes

Zheming Gong, Lingjun Shu, Jingxuan Yin, Chengwei Gao, Yongxing Liu, Xiaolong Zhou, Xiang Shen, Shixun Dai, Changgui Lin\* and Qing Jiao\*



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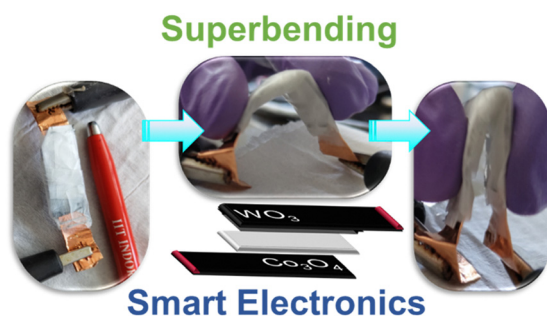
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### Crystalline morphology formation in phase-field simulations of binary mixtures

Maxime Siber,\* Olivier J. J. Ronsin and Jens Harting

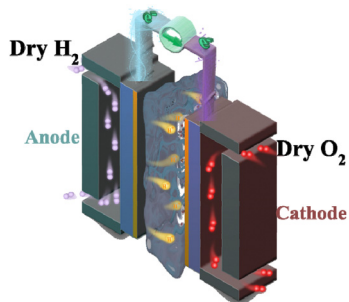
16000



### A supercapacitive all-inorganic nano metal–oxide complex: a 180° super-bendable asymmetric energy storage device

Love Bansal, Suchita Kandpal, Tanushree Ghosh, Chanchal Rani, Bhumiika Sahu, Deb Kumar Rath and Rajesh Kumar\*

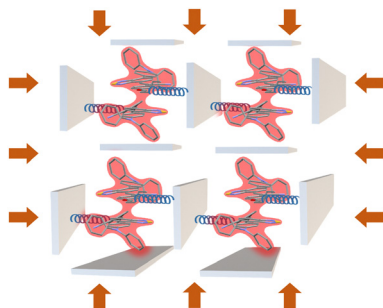
16010



### Gelation of a metal oxide cluster for a proton exchange membrane operated under low humidity

Xinpei Li, Qiang Yu, Kun Chen, Linkun Cai, Lu Liu, Mingxin Zhang, Yuan Liu, Yijie Gu,\* Jia-Fu Yin\* and Panchao Yin\*

16017



### A rigid-flexible steric blocking strategy for highly bright and ultrawide piezochromism in the deep-red/near-infrared region

Chengjian Li, Qing Zhang, Jingwei Sun,\* Kai Wang, Mi Ouyang\* and Yujian Zhang\*

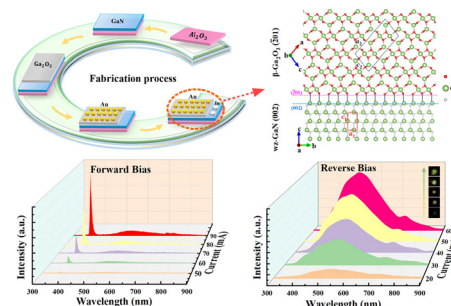




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## Ultra-violet and yellow-green emissions under intriguing bidirectional DC driving based on Au/i-Ga<sub>2</sub>O<sub>3</sub>/n-GaN MIS heterojunction light-emitting diodes

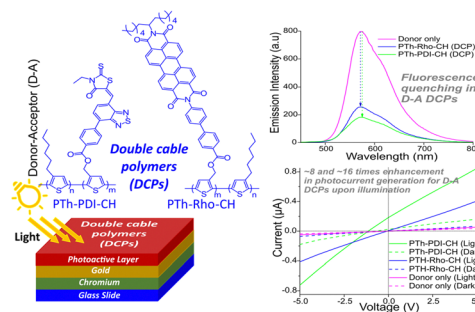
Xian Zhang, Zhiang Yue, Guojiao Xiang, Jinming Zhang, Enqin Zhao, Chengle Song, Bingxin Ding, Hangyu He, Lukai Wang, Wenwen Jin, Jingwen Shu, Hui Wang\* and Yang Zhao\*



16037

## All organic double cable polymers of a polythiophene donor with rhodanine and perylene diimide acceptors and evaluation of photocurrent generation

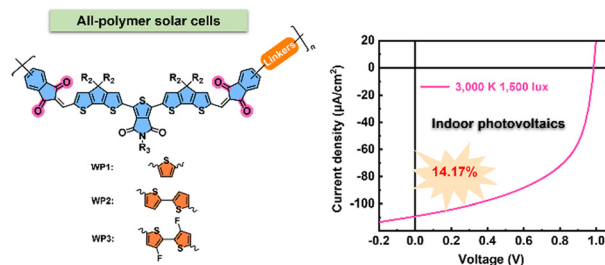
Sana Iqbal, Ammar Ahmed Khan, Nauman Zaffar Butt, Raja Shahid Ashraf and Basit Yameen\*



16049

## All-polymer solar cells based on wide bandgap polymerized non-fused electron acceptors for indoor photovoltaics

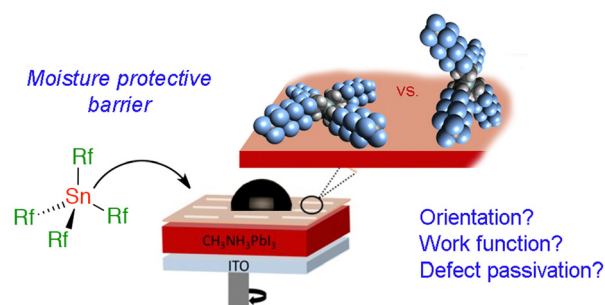
Bo Wang, Wenbin Lai,\* Shijie Liang, Yikun Wang, Chao Wang, Chengyi Xiao\* and Weiwei Li\*



16056

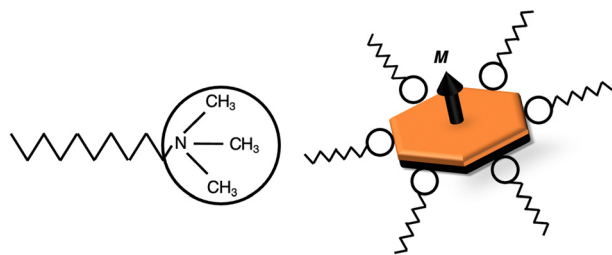
## Optimization of fluorinated interfacial layers with minimal surface coverage for hybrid perovskite materials

Riva Alkarsifi, Thierry Buffeteau, Christine Labrugère-Sarroste, Lionel Hirsch, Dario M. Bassani\* and Thierry Toupance\*



## PAPERS

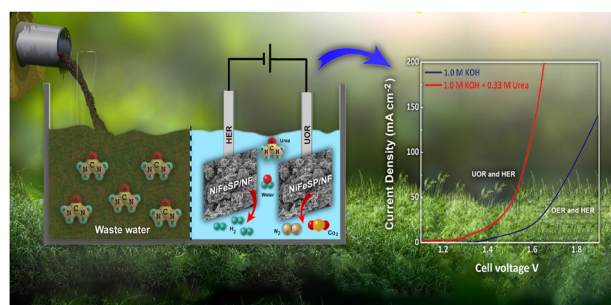
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### Synthesis of barium hexaferrite nano-platelets for ethylene glycol ferrofluids

Y. Ahmed, A. Paul, P. Hribar Boštjančič, A. Mertelj, D. Lisjak and D. Zabek\*

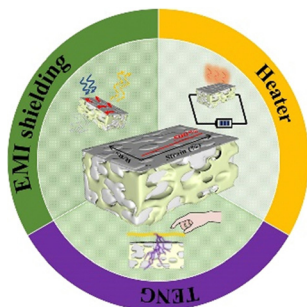
16074



### Enhancing hydrogen generation through urea electro-oxidation on a bimetallic and dual-anionic NiFeSP/NF nanostructured electrode

Shahab Paygozar, Alireza Sabour Rouhaghdam, Zhenyu Li, Taihuan Shao, Ghasem Barati Darband\* and Jinyang Li\*

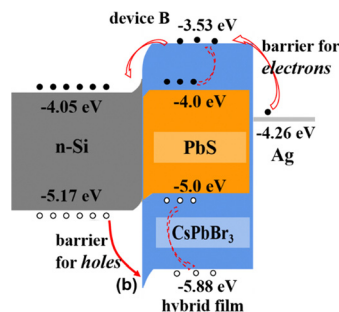
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### Intrinsically stretchable porous liquid–metal conductor for multifunctional electronics applications

Xin Sun, Minghui Yin, Ruixue Xu, Zhiwei Fu, He Zhu, Qikai Guo, Yang Li, Chao Li,\* Yan Li\* and Kai Qian\*

16094



### On the mechanism to suppress dark current via blending with an all-inorganic perovskite precursor in colloidal quantum dot photodetectors

Ying Wu, Shengyi Yang,\* Feiyang Sun, Xiaoxuan Liu, Zhenheng Zhang, Yi Tang, Yurong Jiang and Bingsuo Zou

