

# Journal of Materials Chemistry C

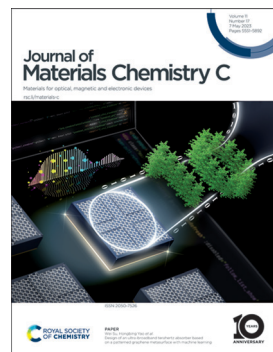
Materials for optical, magnetic and electronic devices

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## IN THIS ISSUE

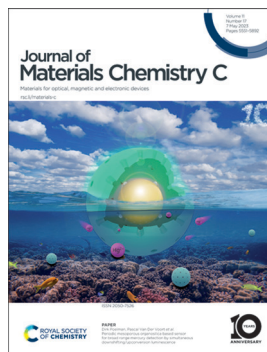
ISSN 2050-7526 CODEN JMCCCX 11(17) 5551–5892 (2023)



### Cover

See Wei Su, Hongbing Yao et al., pp. 5625–5633.

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### Inside cover

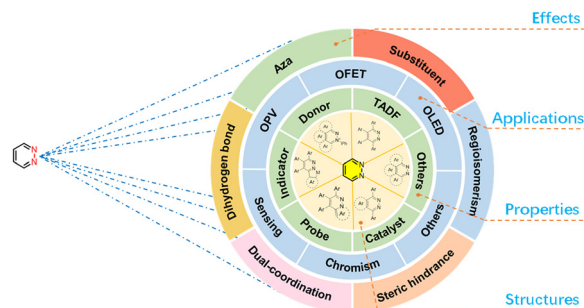
See Dirk Poelman, Pascal Van Der Voort et al., pp. 5634–5645. Image reproduced by permission of Pascal Van Der Voort from *J. Mater. Chem. C*, 2023, 11, 5634.

## REVIEWS

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### Recent advances in versatile pyridazine-cored materials: principles, applications, and challenges

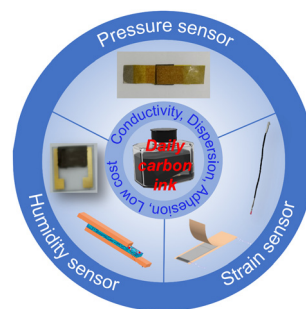
Jing Zhang, Yanze Jiang, Xiaojie Cheng, Yingjie Xie, Jianfeng Zhao\* and Jiena Weng\*



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### Amorphous carbon material of daily carbon ink: emerging applications in pressure, strain, and humidity sensors

Zaihua Duan, Zhen Yuan, Yadong Jiang, Liu Yuan\* and Huiling Tai\*



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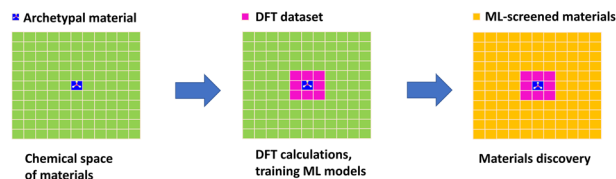
## COMMUNICATIONS

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## Investigating magnetic van der Waals materials using data-driven approaches

Romakanta Bhattarai, Peter Minch and Trevor David Rhone\*

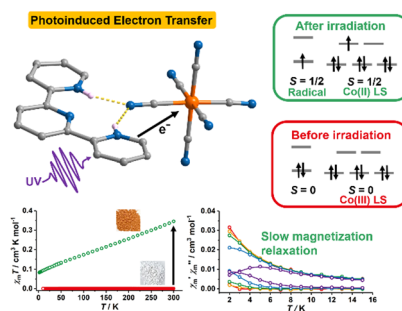
Data-driven studies of magnetic vdW materials



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## Room temperature photochromism and photoinduced slow magnetic relaxation of cyanometallic supramolecular hybrid salts

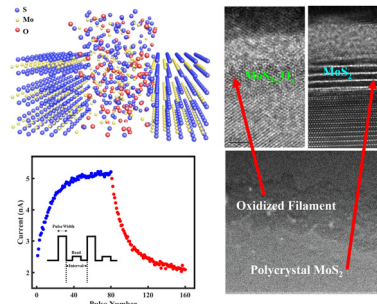
Guo-Zhang Huang, Peng-Xu Lu, Meng-Meng Zeng, Wei Deng, Kai-Ping Xie, Zhen-Xing Wang, Jun-Liang Liu, Yan-Cong Chen\* and Ming-Liang Tong\*



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A high linearity and energy-efficient artificial synaptic device based on scalable synthesized MoS<sub>2</sub>

Yuxin Zhao, Yuanhao Jin,\* Xing Wang, Jie Zhao, Sanming Wu, Mengjuan Li, Jiaping Wang, Shoushan Fan and Qunqing Li\*

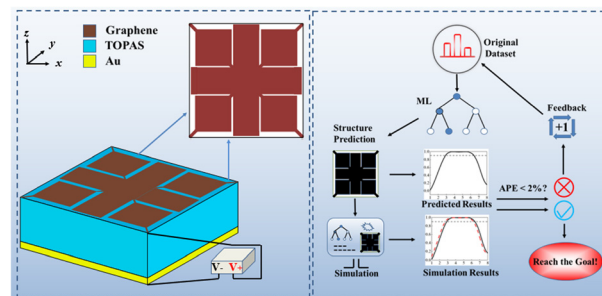


## PAPERS

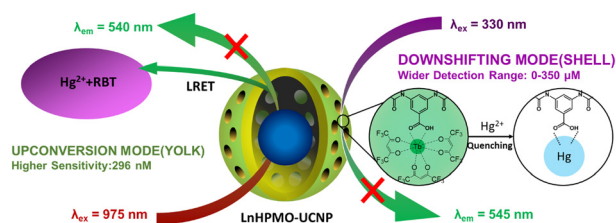
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## Design of an ultra-broadband terahertz absorber based on a patterned graphene metasurface with machine learning

Zhipeng Ding, Wei Su,\* Yinlong Luo, Lipengan Ye, Hong Wu and Hongbing Yao\*



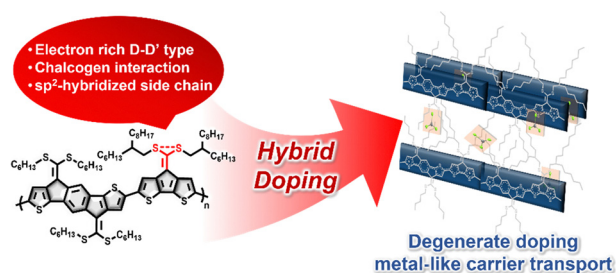
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### Periodic mesoporous organosilica based sensor for broad range mercury detection by simultaneous downshifting/upconversion luminescence

Chunhui Liu, Anna M. Kaczmarek, Himanshu Sekhar Jena, Zetian Yang, Dirk Poelman\* and Pascal Van Der Voort\*

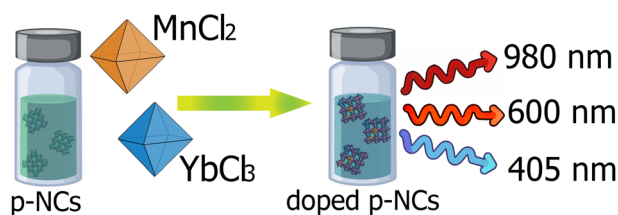
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### A heavily doped D-D'-type polymer with metal-like carrier transport via hybrid doping

Ayushi Tripathi, Yoonjoo Lee, Changhwa Jung, Soohyun Kim, Soonyong Lee, Woojin Choi, Chaeyeon Park, Young Wan Kwon, Hyunjung Lee\* and Han Young Woo\*

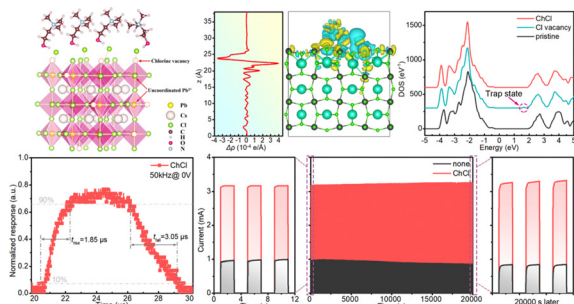
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### Anion-assisted Yb<sup>3+</sup> and Mn<sup>2+</sup> doping of 0D and 2D lead halide perovskite nanostructures

Danila A. Tatarinov, Anastasiia V. Sokolova, Ivan D. Skurlov, Denis V. Danilov, Aleksandra V. Koroleva, Natalya K. Kuzmenko, Yuliya A. Timkina, Mikhail A. Baranov, Evgeniy V. Zhizhin, Anton N. Tcyppkin and Aleksandr P. Litvin\*

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### Ultrafast self-powered CsPbCl<sub>3</sub> ultraviolet photodetectors with choline chloride for surface passivation and charge transport regulation

Shulan Jiang, Zeliang Hou, Xin Zheng, Qian Wu, Xiaoqi Yang, Wuqiong Cai, Ying Yi, Siyi Cheng, Guojun Wen and Xingyue Liu\*



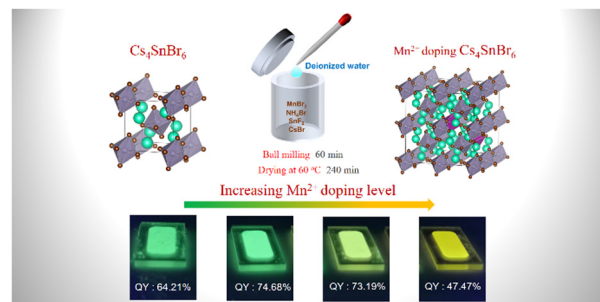


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### Manipulating the sublattice distortion induced by $\text{Mn}^{2+}$ doping for boosting the emission characteristics of self-trapped excitons in $\text{Cs}_4\text{SnBr}_6$

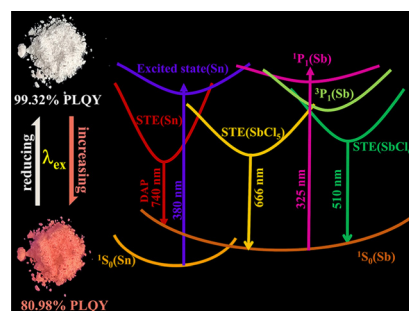
Zhenxu Lin, Anyang Wang, Rui Huang,\* Haixia Wu, Jie Song, Zewen Lin, Dejian Hou, Zhaofu Zhang, Yuzheng Guo\* and Sheng Lan\*



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### Antimony doped tin(IV) hybrid metal halides with high-efficiency tunable emission, WLED and information encryption

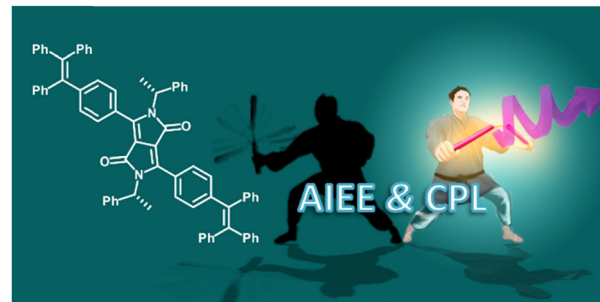
Wenchao Lin, Qilin Wei, Tao Huang, Xianfu Meng, Ye Tian, Hui Peng\* and Bingsuo Zou\*



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### Chiral diketopyrrolopyrrole dyes showing light emission in solid and aggregate states

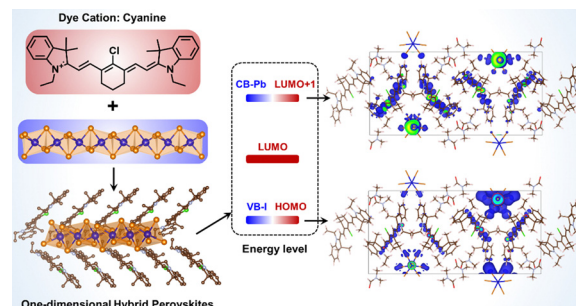
Maurizio Mastropasqua Talamo,\* Thomas Cauchy, Flavia Pop,\* Francesco Zinna, Lorenzo Di Bari and Narcis Avarvari\*



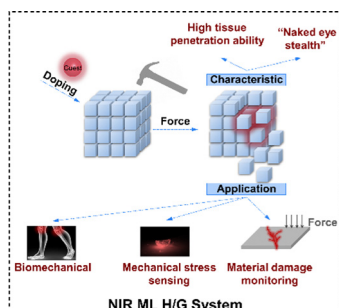
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### Impact of organic–inorganic wavefunction delocalization on the electronic and optical properties of one-dimensional hybrid perovskites

Xiaojuan Ni, Sadisha Nanayakkara, Hong Li\* and Jean-Luc Brédas\*



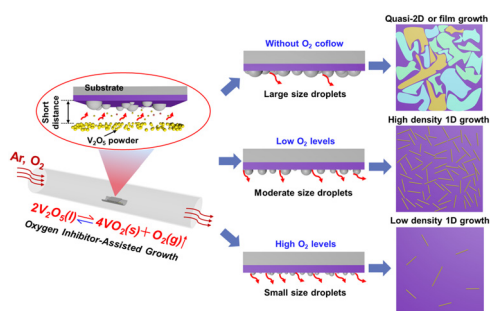
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## Realizing near-infrared mechanophosphorescence from an organic host/guest system

Fei Hao, Hailan Wang, Donghai Yu, Zhenwei Liu, Tiantian Zhang, Mingyao Shen and Tao Yu\*

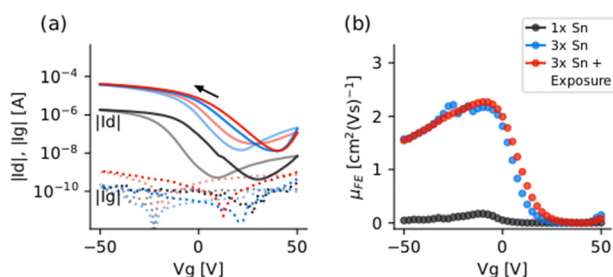
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## Synthesis, metal–insulator transition, and photo-response characteristics of VO<sub>2</sub> nanobeams via an oxygen inhibitor-assisted vapor transport method

Xitao Guo,\* Yupei Hu, Xin Liu, Zainab Zafar, Weiping Zhou, Xingyu Liu, Lin Feng, Jijun Zou and Haiyan Nan\*

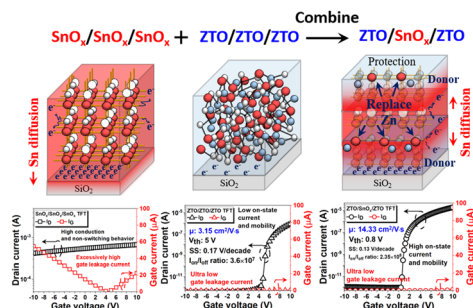
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## Multi-pulse atomic layer deposition of p-type SnO thin films: growth processes and the effect on TFT performance

Daisy E. Gomersall,\* Kham M. Niang, James D. Parish, Zhuotong Sun, Andrew L. Johnson, Judith L. MacManus-Driscoll and Andrew J. Flewitt

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## Performance improvement of a sol–gel ZTO-based TFT due to an interfacial SnO<sub>x</sub> dopant layer

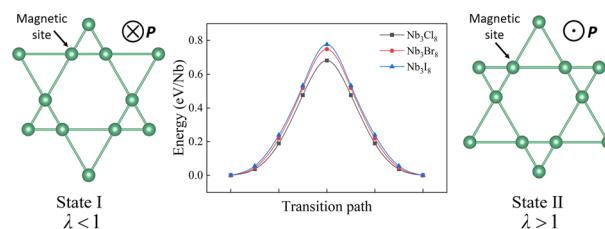
Wun-Ciang Jhang, Pin-Han Chen, Chih-Chieh Hsu\* and Umakanta Nanda



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## Enabling triferroics coupling in breathing kagome lattice $\text{Nb}_3\text{X}_8$ ( $\text{X} = \text{Cl}, \text{Br}, \text{I}$ ) monolayers

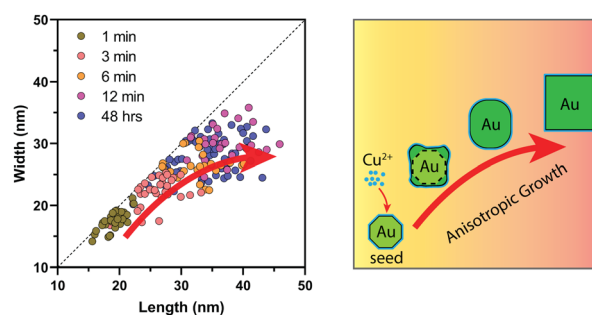
Yulin Feng and Qing Yang\*



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## Copper assisted symmetry and size control of gold nanobars

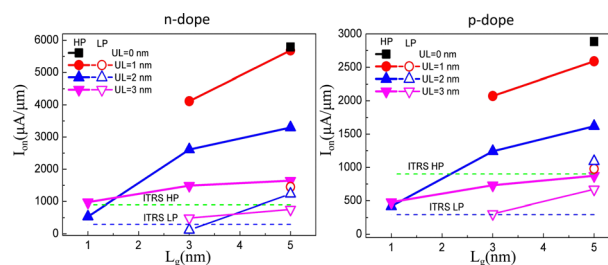
Weilun Li, Wenming Tong, Joanne Etheridge\* and Alison M. Funston\*



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## Performance limit of one-dimensional SbSI nanowire transistors

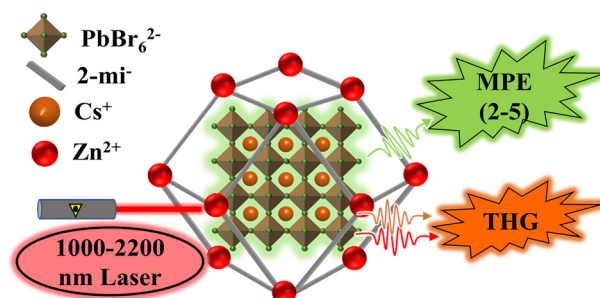
Xingyi Tan,\* Qiang Li and Dahua Ren



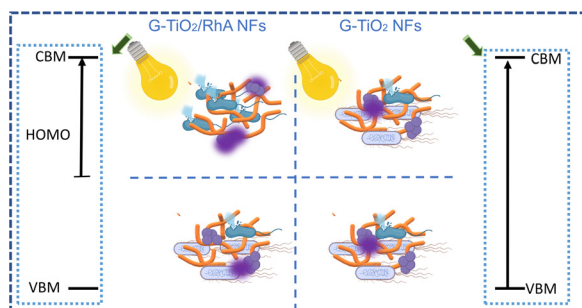
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## Near-infrared multiphoton absorption and third harmonic generation with $\text{CsPbBr}_3$ quantum dots embedded in micro-particles of metal-organic frameworks

Qingxin Fan, Zhe Yan, Hao Zhou, Yige Yao, Zhenkun Wang, Yunan Gao, Yilin Wang, Shunbin Lu,\* Min Liu\* and Wei Ji



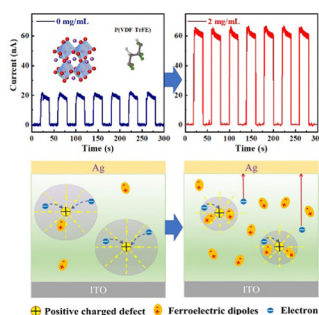
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### Photon-driven bactericidal performance of surface-modified TiO<sub>2</sub> nanofibers

Mina Shahriari-Khalaji, Fatemeh Zabihi,\* Addie Bahi, Dušan Sredojević, Jovan M. Nedeljković,\* Daniel K. Macharia, Matteo Ciprian, Shengyuan Yang\* and Frank Ko

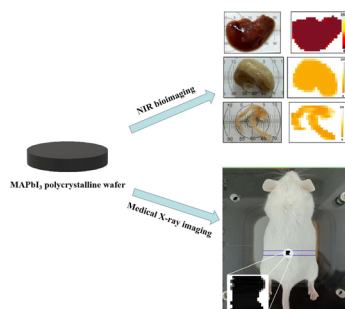
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### The effect of permanent electric dipoles on the stability and photoelectric properties of MAPbI<sub>3</sub> films

Liufang Chen, Zhihang Zhang, Wenjing Zhai, Guangyuan Li, Lin Huang, Xinyu Li, Wenhao Zheng, Lin. Lin, Xiaohui Zhou, Zhibo Yan\* and Jun-Ming Liu

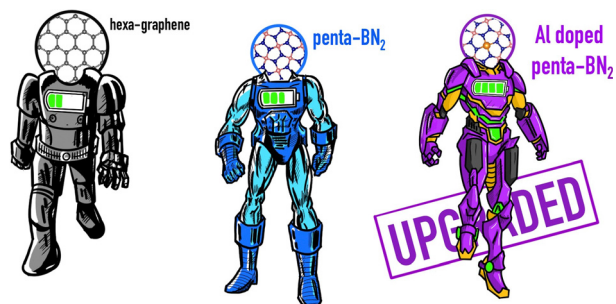
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### Hot-pressed CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> polycrystalline wafers for near-infrared bioimaging and medical X-ray imaging

Ji Yu, Yanmei Qu, Yufu Deng, Dechuan Meng, Ning Tian,\* Lin Li,\* Jie Zheng, Yongtao Huang, Yinxian Luo and Wenzhu Tan

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### Enabling enhanced lithium storage capacity of two-dimensional pentagonal BN<sub>2</sub> by aluminum doping

Thanasee Thanasarnsurapong, Panyalak Dettrattanawichai, Klichchupong Dabsamut, Kodchakorn Simalaotao, Tosapol Maluangnont and Adisak Boonchun\*



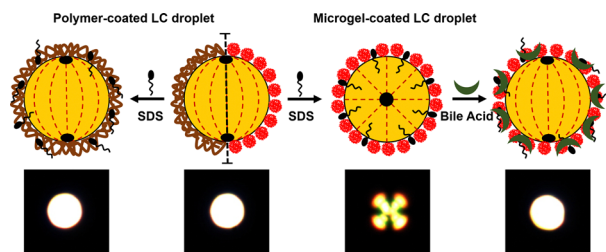


## PAPERS

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# Ultra-stable liquid crystal droplets coated by sustainable plant-based materials for optical sensing of chemical and biological analytes

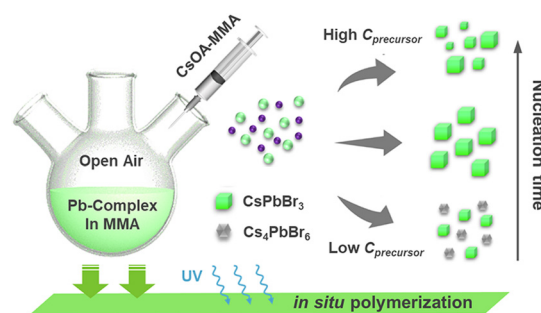
Shikha Aery, Adele Parry, Andrea Araiza-Calahorra, Stephen D. Evans, Helen F. Gleeson, Abhijit Dan\* and Anwesha Sarkar\*



5846

# One-pot synthesis of CsPbBr<sub>3</sub> nanocrystals in methyl methacrylate: a kinetic study, *in situ* polymerization, and backlighting applications

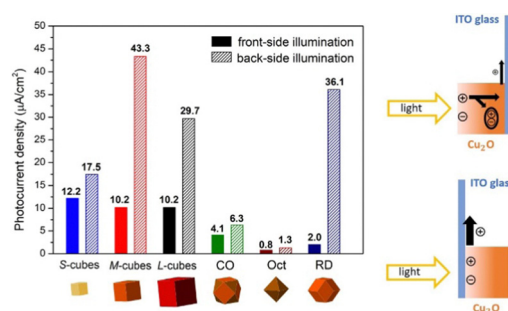
Shuangshuang Shi, Hao Lv, Yingchao Ge, Yingying Wang, Shu Xu\* and Chong Geng\*



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# Size- and facet-dependent photoelectrochemical properties of Cu<sub>2</sub>O crystals

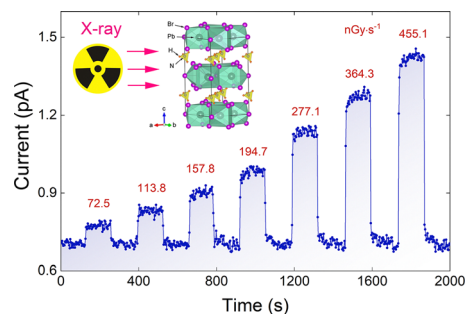
Hsueh-Heng Ma and Michael H. Huang\*



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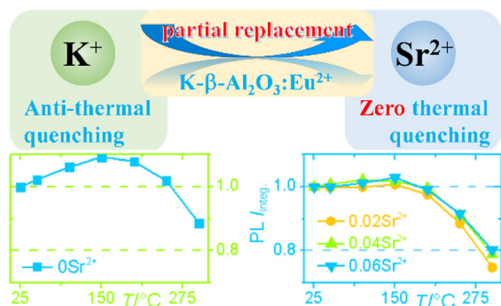
# Crystal growth, transport behavior and X-ray detection of non-perovskite-phase NH<sub>4</sub>Pb<sub>2</sub>Br<sub>5</sub>

Ning Li, Chaofan Zhang, Zheyin Chen, Xin Liu and Bin-Bin Zhang\*



## PAPERS

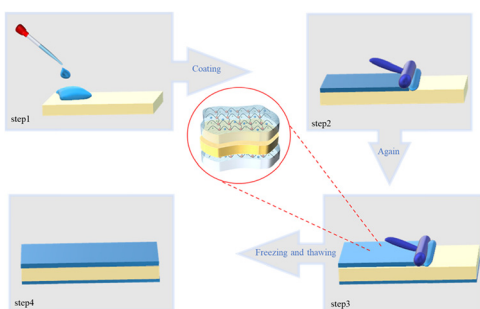
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### Regulating anti-thermal quenching to zero thermal quenching for highly efficient blue-emitting $\text{Eu}^{2+}$ -doped K-beta-alumina phosphors

Yuhang Kuang, Yunjia Li, Borui Chen, Shujuan Zhao, Mengfang Chen, Shixun Lian and Jilin Zhang\*

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### A wearable alternating current electroluminescent device based on imidazole chloride ionogel films with high conductivity, stretchability and transmittance

Gongman Zhang, Yang Guo, Yongzheng Fang, Yaoqing Chu and Zhifu Liu\*

## CORRECTION

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### Correction: Tunable optical properties of transition metal dichalcogenide nanoparticles synthesized by femtosecond laser ablation and fragmentation

Anton S. Chernikov, Gleb I. Tselikov, Mikhail Yu. Gubin,\* Alexander V. Shesterikov, Kirill S. Khorkov, Alexander V. Syuy, Georgy A. Ermolaev, Ivan S. Kazantsev, Roman I. Romanov, Andrey M. Markeev, Anton A. Popov, Gleb V. Tikhonowski, Olesya O. Kapitanova, Dmitry A. Kochuev, Andrey Yu. Leksin, Daniil I. Tselikov, Aleksey V. Arsenin, Andrei V. Kabashin, Valentyn S. Volkov and Alexei V. Prokhorov

