

# Journal of Materials Chemistry C

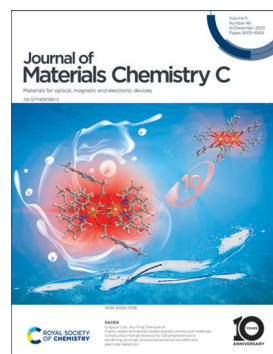
Materials for optical, magnetic and electronic devices

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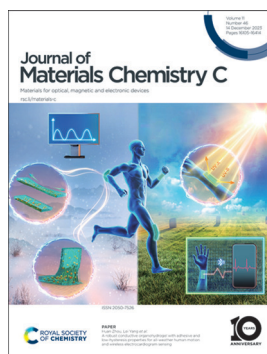
## IN THIS ISSUE

ISSN 2050-7526 CODEN JMCCCC 11(46) 16105–16414 (2023)



### Cover

See Lingyun Cao, Xiu-Ying Zheng *et al.*, pp. 16125–16134. Image reproduced by permission of Xiu-Ying Zheng and Mei-Xin Hong from *J. Mater. Chem. C*, 2023, **11**, 16125.



### Inside cover

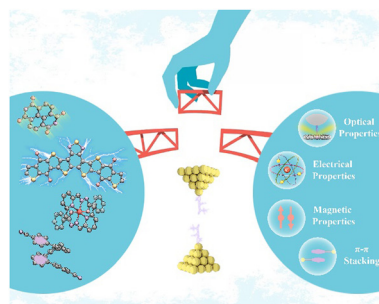
See Huan Zhou, Lei Yang *et al.*, pp. 16135–16142. Image reproduced by permission of Huan Zhou and Lei Yang from *J. Mater. Chem. C*, 2023, **11**, 16135.

## PERSPECTIVE

16117

### Bridging the gap from single molecule properties to organic semiconductor materials

Qian Zhan, Dacheng Dai, Fang Miao, Dongsheng Wang,\* Xiaodong Liu\* and Yonghao Zheng\*

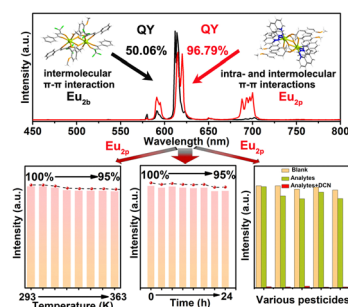


## PAPERS

16125

### Highly stable lanthanide cluster-based luminescent materials constructed from $\beta$ -diketone to 1,10-phenanthroline exhibiting ultrahigh photoluminescence and efficient pesticide detection

Mei-Xin Hong, Cheng Chen, Lingyun Cao,\* Jun Zheng and Xiu-Ying Zheng\*



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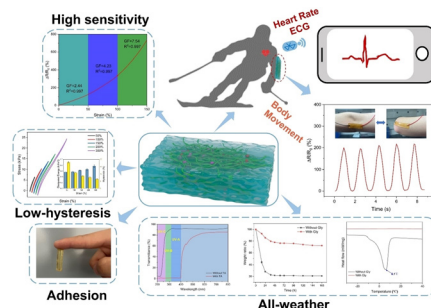


## PAPERS

16135

# A robust conductive organohydrogel with adhesive and low-hysteresis properties for all-weather human motion and wireless electrocardiogram sensing

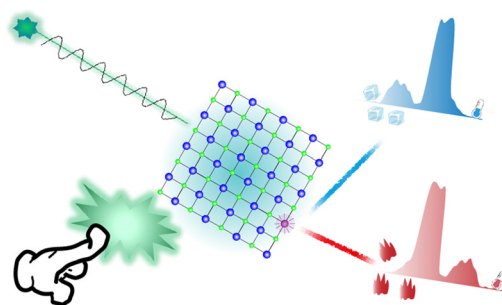
Yuhao Zhao, Qianbin Zhao, Shihao Peng, Huan Zhou\* and Lei Yang\*



16143

# Application convenient and energy-saving mechano-optics of $\text{Er}^{3+}$ -doped $\text{X}_2\text{O}_2\text{S}$ ( $\text{X} = \text{Y/Lu/Gd}$ ) for thermometry

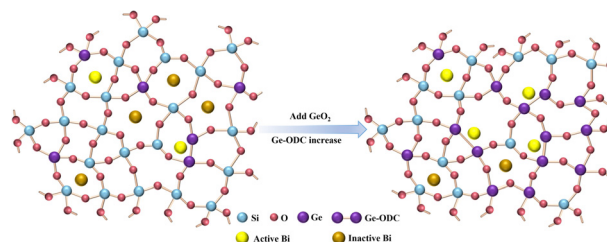
Yixiao Han, Leipeng Li,\* Chongyang Cai, Pei Li, Tao Li, Xiumei Han, Dengfeng Peng\* and Yanmin Yang\*



16152

# Broadband L+ near-infrared luminescence in bismuth/germanium co-doped silica glass prepared by the sol-gel method

Xin Li, Mengting Guo, Chongyun Shao, Jinming Tian, Fan Wang, Yinggang Chen, Yan Jiao, Chunlei Yu\* and Lili Hu\*



16159

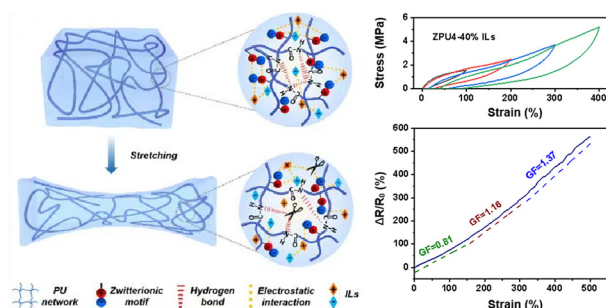
# Reducing intersystem crossing rates of boron emitters for high-efficiency and long-lifetime deep-blue OLEDs

Keyan Bai, Mengke Li, Xiaofeng Tan, Lei Dai, Kaichun Liang, Huiyang Li\* and Shi-Jian Su\*



## PAPERS

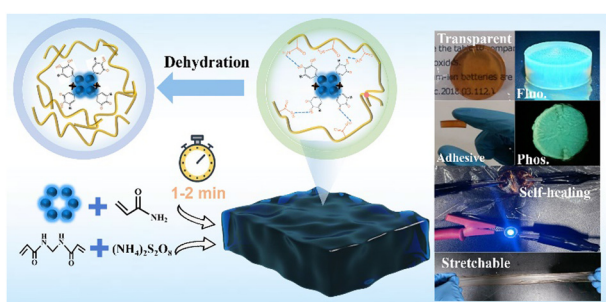
16168



### Skin-mimetic tough polyurethane ionogel for use in soft ionotronics

Bin Hong, Yiyan Xu, Jun Tan,\* Zeming Xie, Si Yu Zheng,\* Qi Wang,\* Zhijun Zhou and Jintao Yang\*

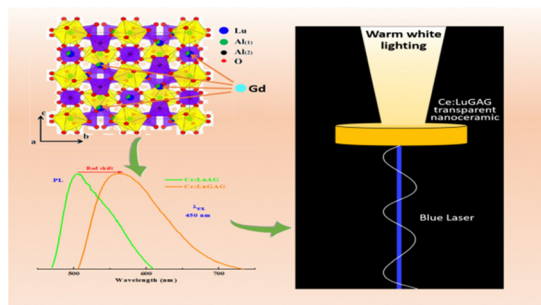
16177



### Ultrafast fabrication of lignin carbon dot hydrogels with self-mending properties and dehydration-visualizable phosphorescence for chemical sensing and information encryption

Junyu Chen, Gui Chen, Caijuan Wu, Bingfu Lei, Yingliang Liu and Mingtao Zheng\*

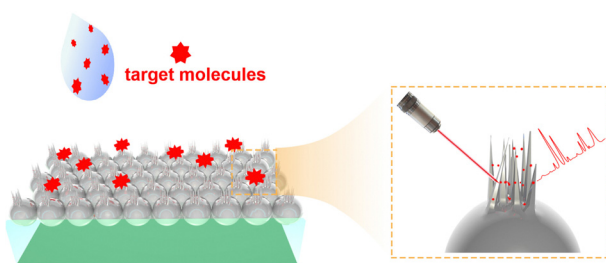
16186



### Elaboration of Ce:(Lu,Gd)<sub>3</sub>Al<sub>5</sub>O<sub>12</sub>–Al<sub>2</sub>O<sub>3</sub> transparent nanoceramics through full glass crystallization for high-power white LED/LD lighting

Jie Fu, Ying Zhang, Shaowei Feng, Yongchang Guo, Yafeng Yang, Cécile Genevois, Emmanuel Véron, Hui Wang, Mathieu Allix\* and Jianqiang Li\*

16195



### A high-density Ag nanoneedle forest array by using a nano-peeling technique for near-infrared SERS detection

Zhiming Chen, Pan Zeng, Yifan Wang, Guofeng Zhang, Jie Yu, An Cao, Dilong Liu\* and Yue Li\*

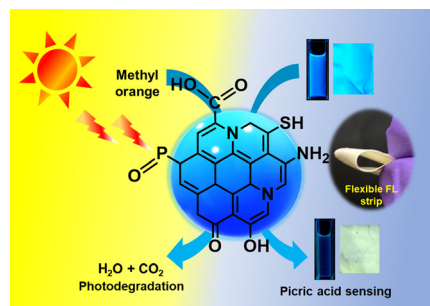


## PAPERS

16201

# Portable and non-invasive fluorescent thin films from photocatalytically active carbon dots for selective and trace-level detection of picric acid

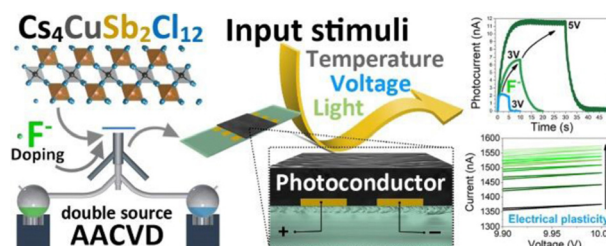
Nirmiti Mate, Divya Khandelwal, Kallayi Nabeela and Shaikh M. Mobin\*



16214

# All-green $\text{Cs}_4\text{CuSb}_2\text{Cl}_{12}$ perovskite films deposited *in situ* by AACVD and their doping with $\text{F}^-$ ions for photodetectors and memdiodes

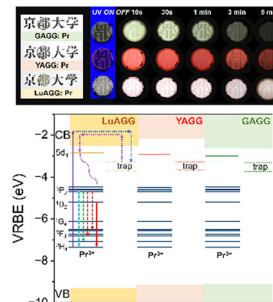
Jesús Uriel Balderas-Aguilar,\* Ciro Falcony-Guajardo, Ismael Arturo Garduño-Wilches, Miguel Ángel Aguilar-Frutos, Norberto Hernández-Como, Iván Enrique Martínez-Merlín, Manuel García-Hipólito and Juan Carlos Alonso-Huitrón



16225

# Toward color variation of long persistent luminescence in $\text{Pr}^{3+}$ -doped garnet transparent ceramic phosphors

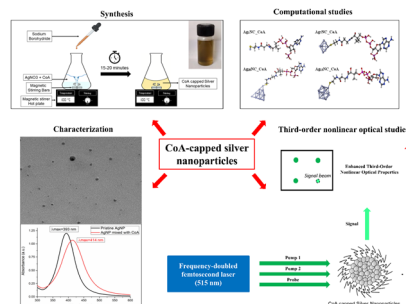
Qiping Du,\* Jumpei Ueda\* and Setsuhisa Tanabe



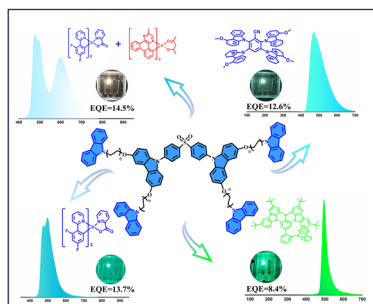
16234

# Investigation of enhanced third-order optical nonlinearity in novel coenzyme A capped silver nanoparticles

Aditya Dileep Kurdekar,\* Prajal Chettri, Rajasimha Kurnoothala, Chelli Sai Manohar, Shailesh Srivastava and Krishna Chaitanya Vishnubhatla



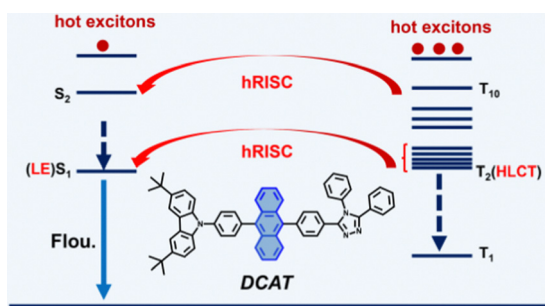
16247



### Developing versatile dendrimer host materials for solution-processed phosphorescence, TADF and multi-resonance narrow-band OLEDs

Wenhao Zhang, Jianmin Yu, Qingpeng Cao, Youqiang Qian, Jiayi Wang, Caixia Yang, Hongyu Zhuang, Wenzhong Bian, Yumeng Xin and Xinxin Ban\*

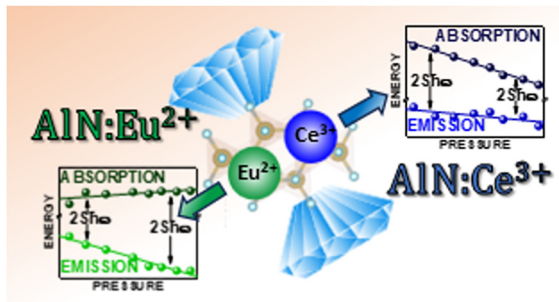
16258



### Highly efficient deep-blue organic light-emitting diodes (OLEDs) based on hot-exciton materials with multiple triplet exciton conversion channels

Mizhen Sun, Chenglin Ma, Lizhi Chu, Yuyu Pan, Qikun Sun, Wenjun Yang and Shanfeng Xue\*

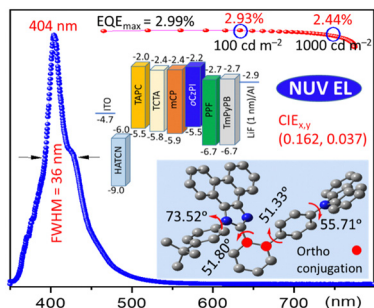
16264



### Opposite pressure impact on electron–phonon coupling in $\text{Eu}^{2+}$ and $\text{Ce}^{3+}$ doped AlN

Mikołaj Kamiński,\* Agata Lazarowska, Tadeusz Leśniewski, Ru-Shi Liu and Sebastian Mahlik\*

16271



### Weak-conjugation linked donor–acceptor emitters for efficient near-ultraviolet organic light-emitting diodes with narrowed full width at half maximum

Ziting Zhong, Zhangshan Liu, Xianhui Wang, Dan Xiong, Huihui Li, Xin Jiang Feng,\* Zujin Zhao\* and Hua Lu\*

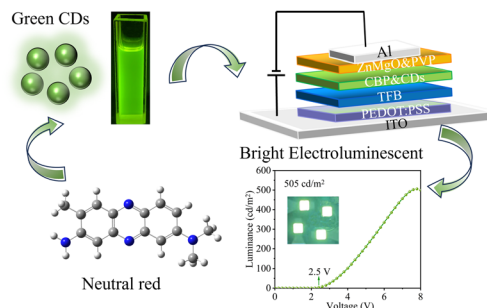


## PAPERS

16280

## Optimizing charge balance in carbon dot-based LEDs for enhanced performance

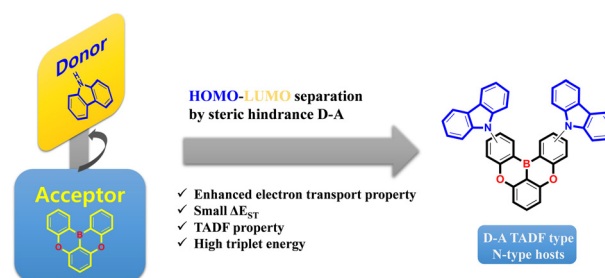
Zhenzhen Yu, Zhenyang Liu,\* Mingjun Chen, Jinxing Zhao, Chaoqi Hao, You Zhang, Fenghe Wang, Guoyi Dong, Li Guan\* and Xu Li\*



16288

## Oxygen-bridged boron derivatives as electron transport and thermally activated delayed fluorescence host materials for high-performance phosphorescent organic light-emitting diodes

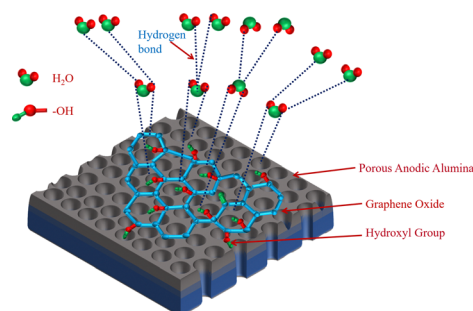
Sook Hee Jeong, Jun Seop Im, Dong Ryun Lee, Han Jin Ahn, Jun Yun Kim, Ji-Ho Baek and Jun Yeob Lee\*



16297

## A graphene oxide (GO)–porous anodic alumina (PAA) bilayer system: How GO dispersion regulates the lower RH detection limit to near zero in conjugation with PAA

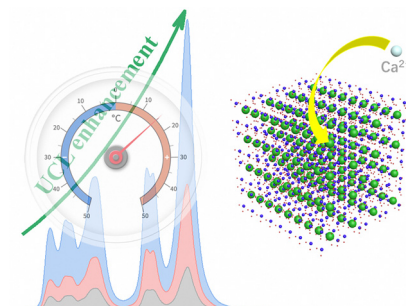
Noor Alam and S. S. Islam\*



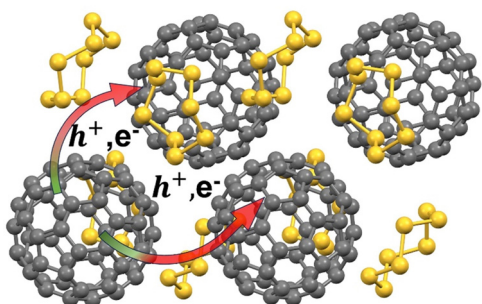
16310

Upconversion enhancement through engineering the local crystal field in Yb<sup>3+</sup> and Er<sup>3+</sup> codoped BaWO<sub>4</sub> along with excellent temperature sensing performance

Guotao Xiang,\* Zhen Liu, Zhiyu Yang, Yongjie Wang, Lu Yao, Sha Jiang, Xianju Zhou, Li Li, Xiaojun Wang\* and Jiahua Zhang\*



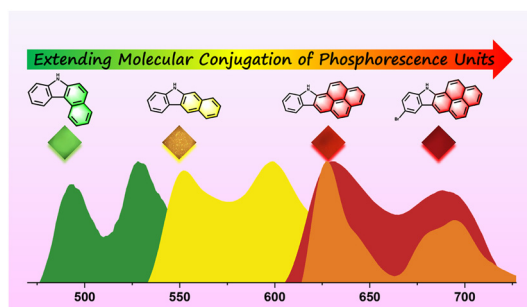
16316



### Electronic, vibrational, and optical properties of fullerene–S<sub>8</sub> co-crystals

Maliheh Shaban Tameh, Xiaojuan Ni, Veaceslav Coropceanu\* and Jean-Luc Brédas\*

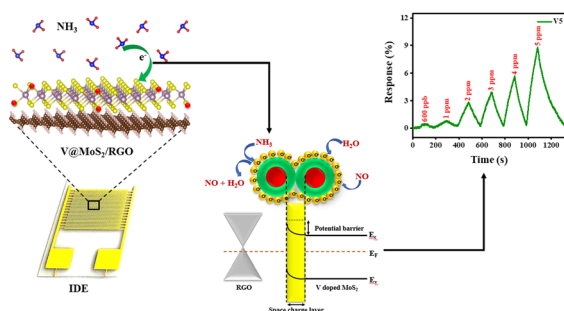
16325



### Extending the molecular conjugation of phosphorescence units to accurately modulate ultralong organic room temperature phosphorescence

Jingjuan Bai, Guangkuo Dai, Huiwen Jin, Jiaxin Ma, Zewei Li, Yan Guan, Mingxing Chen, Zhimin Ma and Zhiyong Ma\*

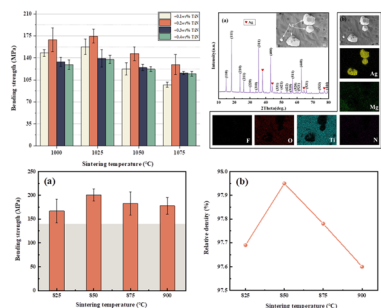
16333



### Edge sites enriched vanadium doped MoS<sub>2</sub>/RGO composites as highly selective room temperature ammonia gas sensors with ppb level detection

Linto Sibi S P, Rajkumar M,\* Kamaraj Govindharaj, Mobika J, Nithya Priya V and Rajendra Kumar Ramasamy Thangavelu

16346



### Enhanced flexural strength and microwave dielectric properties of Li<sub>2</sub>MgTi<sub>3</sub>O<sub>8</sub>-based low temperature co-fired ceramics

Haiqing Deng, Xin Qu, Pengxiang Gao, Yang Liu, Weilin Chen, Xiuli Chen and Huanfu Zhou\*

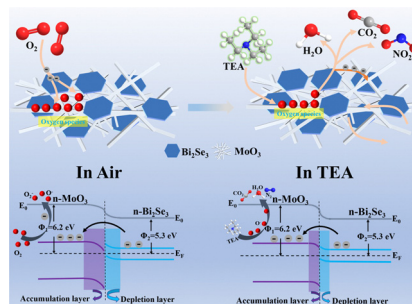


## PAPERS

16356

### A heterojunction composite of Bi<sub>2</sub>Se<sub>3</sub> nanosheets and MoO<sub>3</sub> nanobelts for a high-performance triethylamine sensor

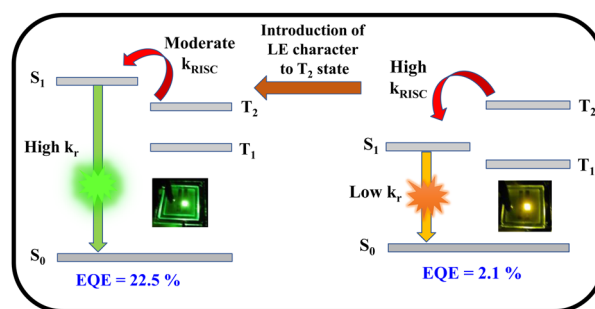
Xiangyun Tan, Li Wang, Xi Chen, Haoliang Zhang, Si Chen, Libing Qian, Zhiyuan Chen and Chunqing He\*



16368

### Systematic investigation *via* controlling the energy gap of the local and charge-transfer triplet state for enabling high efficiency thermally activated delayed fluorescence emitters

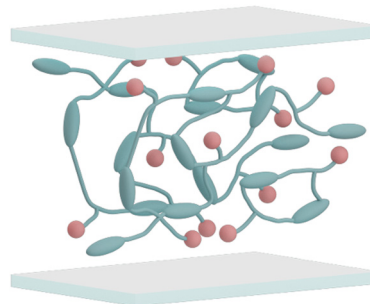
Nisha Yadav, Upasana Deori, Ezhakudiyar Ravindran, Bahadur Sk and Pachaiyappan Rajamalli\*



16377

### Molecular engineering of the polymer stabilizing network to enhance the electro-optic response of cholesteric liquid crystals

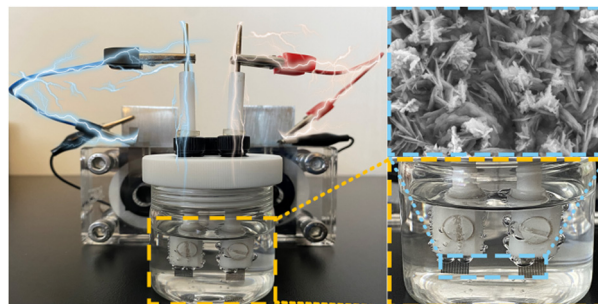
Gaurav K. Pande, Brian P. Radka, Joselle M. McCracken and Timothy J. White\*



16384

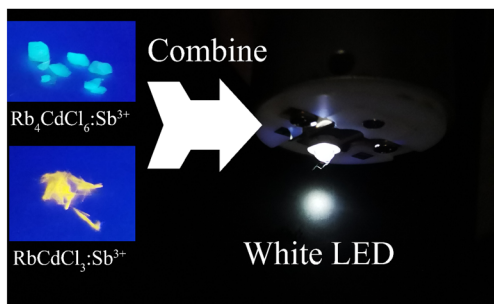
### CoNi<sub>2</sub>S<sub>4</sub>@CoNi-LDH heterojunction grown on SSM as a highly efficient trifunctional catalyst for water-splitting and Zn–air batteries

Zhuo Wang, Juan Jian, Xiuyan Wang,\* Yu Qiao, Meiting Wang, Shuang Gao, Ping Nie and Limin Chang\*



## PAPERS

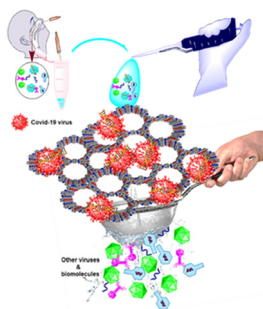
16390



**Metal halides  $\text{RbCdCl}_3\text{:Sb}^{3+}$  and  $\text{Rb}_4\text{CdCl}_6\text{:Sb}^{3+}$  with yellow and cyan emissions obtained via a facile hydrothermal process**

Dayu Huang, Pan Zheng, Ziyong Cheng, Qiuyun Ouyang,\* Hongzhou Lian\* and Jun Lin\*

16398



**Development of pseudo 3D covalent organic framework nanosheets for sensitive and selective biomolecule detection of infectious disease**

Nargish Parvin, Tapas K. Mandal\* and Sang W. Joo\*

## CORRECTION

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**Correction: Compositional engineering solutions for decreasing trap state density and improving thermal stability in perovskite solar cells**

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