

Journal of Materials Chemistry C

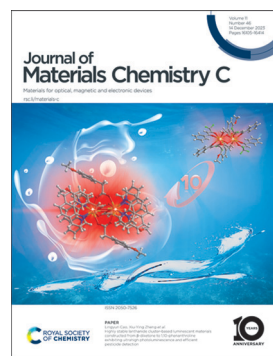
Materials for optical, magnetic and electronic devices

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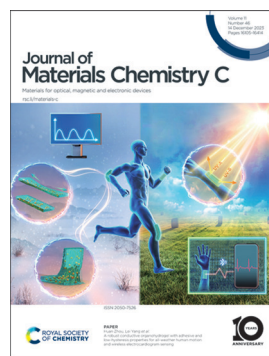
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ISSN 2050-7526 CODEN JMCCCX 11(46) 16105-16414 (2023)



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.



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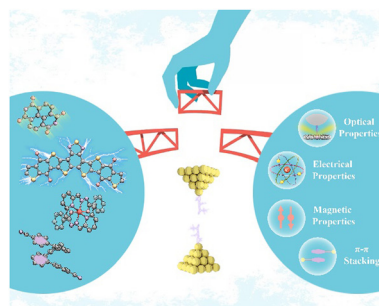
See Huan Zhou, Lei Yang *et al.*, pp. 16135–16142. Image reproduced by permission of Huan Zhou and Lei Yang from *J. Mater. Chem. C*, 2023, **11**, 16135.

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*

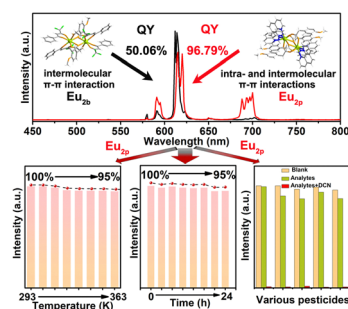


PAPERS

16125

Highly stable lanthanide cluster-based luminescent materials constructed from β -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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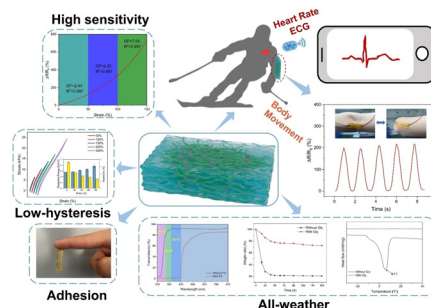
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16135

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

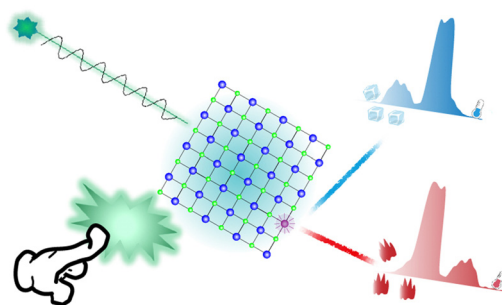
Yuhao Zhao, Qianbin Zhao, Shihao Peng, Huan Zhou* and Lei Yang*



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

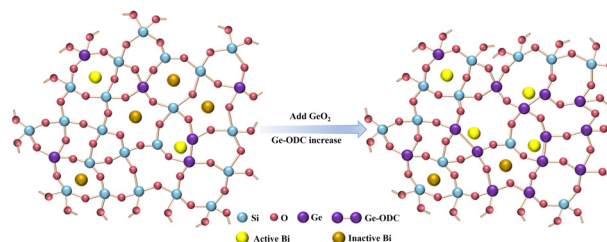
Yixiao Han, Leipeng Li,* Chongyang Cai, Pei Li, Tao Li, Xiumei Han, Dengfeng Peng* and Yanmin Yang*



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*



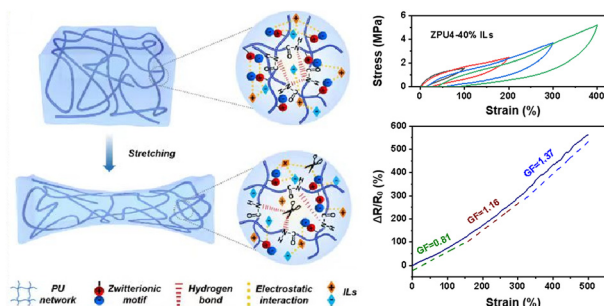
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Reducing intersystem crossing rates of boron emitters for high-efficiency and long-lifetime deep-blue OLEDs

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



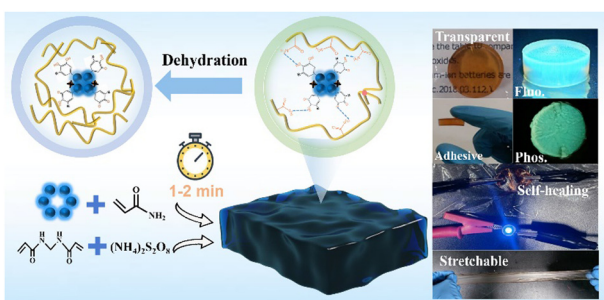
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Skin-mimetic tough polyurethane ionogel for use in soft iontronics

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

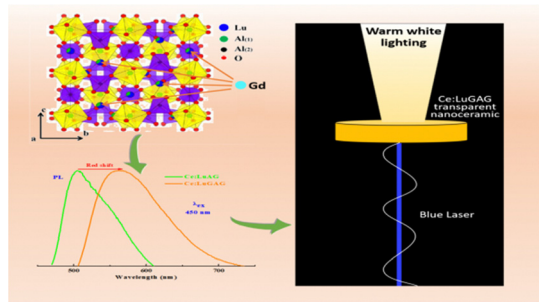
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Ultrafast fabrication of lignin carbon dot hydrogels with self-mending properties and dehydration-visualizable phosphorescence for chemical sensing and information encryption

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

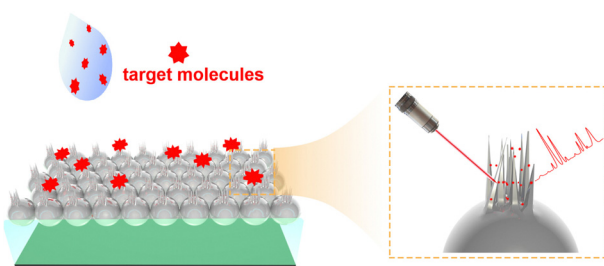
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Elaboration of Ce:(Lu,Gd)₃Al₅O₁₂-Al₂O₃ transparent nanoceramics through full glass crystallization for high-power white LED/LD lighting

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

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

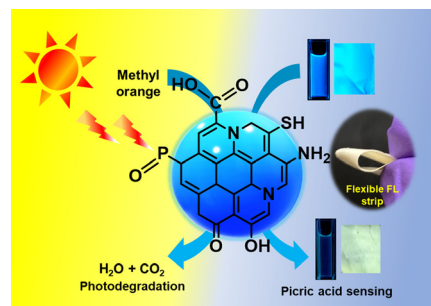
Zhiming Chen, Pan Zeng, Yifan Wang, Guofeng Zhang, Jie Yu, An Cao, Dilong Liu* and Yue Li*



16201

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

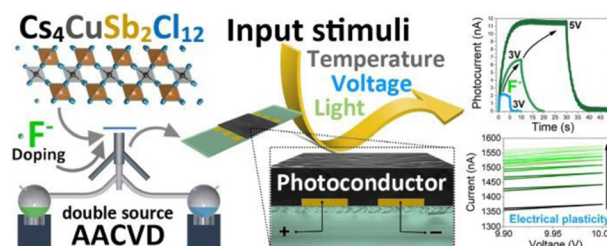
Nirmiti Mate, Divya Khandelwal, Kallayi Nabeela and Shaikh M. Mobin*



16214

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

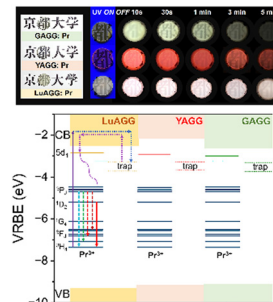
Jesús Uriel Balderas-Aguilar,* Ciro Falcony-Guajardo, Ismael Arturo Garduño-Wilches, Miguel Ángel Aguilar-Frutos, Norberto Hernández-Como, Iván Enrique Martínez-Merlín, Manuel García-Hipólito and Juan Carlos Alonso-Huitrón



16225

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

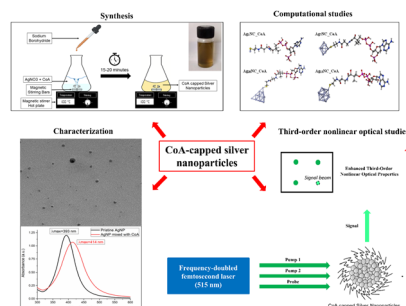
Qiping Du,* Jumpei Ueda* and Setsuhisa Tanabe



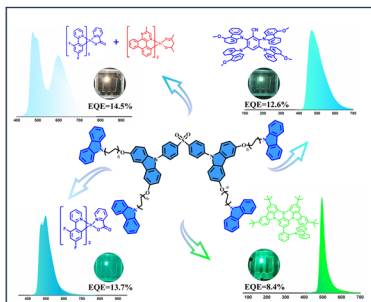
16234

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



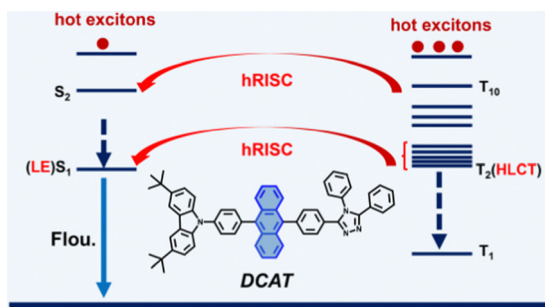
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Developing versatile dendrimer host materials for solution-processed phosphorescence, TADF and multi-resonance narrow-band OLEDs

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

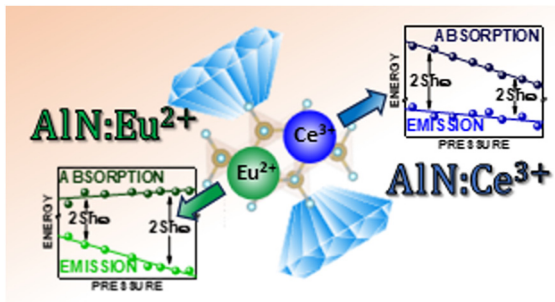
16258



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*

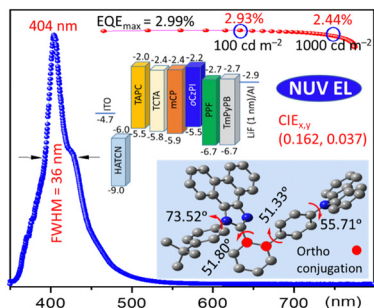
16264



Opposite pressure impact on electron-phonon coupling in Eu^{2+} and Ce^{3+} doped AlN

Mikotaj 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

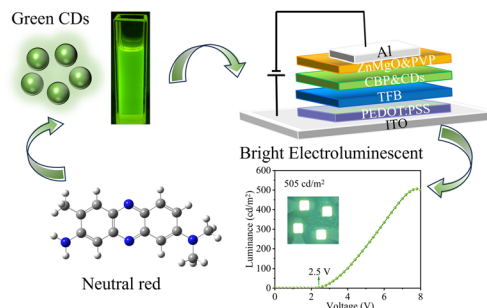
Ziting Zhong, Zhangshan Liu, Xianhui Wang, Dan Xiong, Huihui Li, Xin Jiang Feng,* Zujin Zhao* and Hua Lu*



16280

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

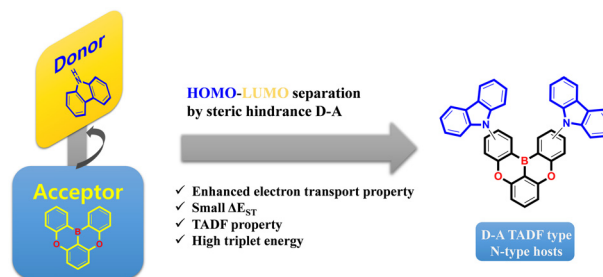
Zhenzhen Yu, Zhenyang Liu,* Mingjun Chen, Jinxing Zhao, Chaoqi Hao, You Zhang, Fenghe Wang, Guoyi Dong, Li Guan* and Xu Li*



16288

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

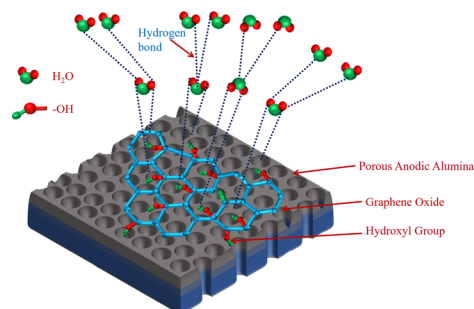
Sook Hee Jeong, Jun Seop Im, Dong Ryun Lee, Han Jin Ahn, Jun Yun Kim, Ji-Ho Baek and Jun Yeob Lee*



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

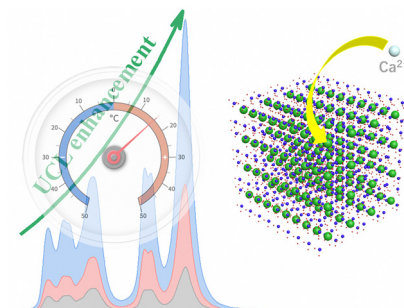
Noor Alam and S. S. Islam*



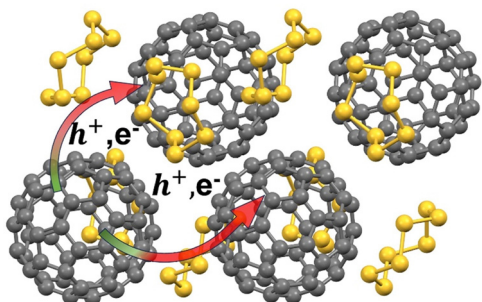
16310

Upconversion enhancement through engineering the local crystal field in Yb³⁺ and Er³⁺ codoped BaWO₄ 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*



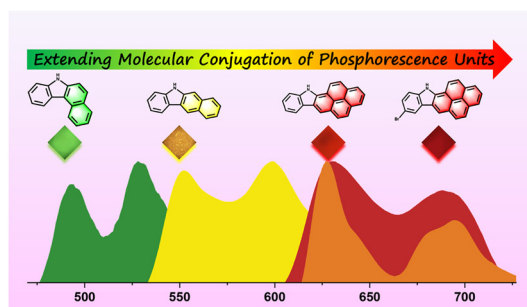
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Electronic, vibrational, and optical properties of fullerene–S₈ co-crystals

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

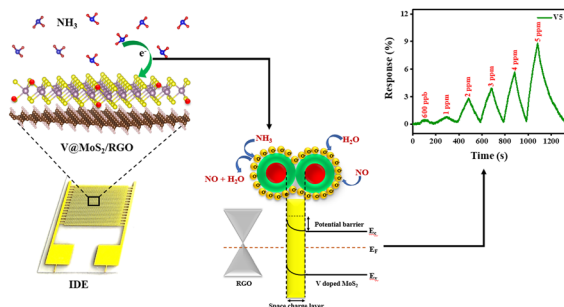
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Extending the molecular conjugation of phosphorescence units to accurately modulate ultralong organic room temperature phosphorescence

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

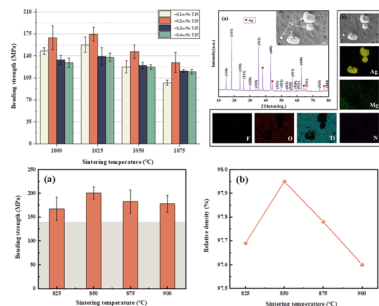
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Edge sites enriched vanadium doped MoS₂/RGO composites as highly selective room temperature ammonia gas sensors with ppb level detection

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 Li₂MgTi₃O₈-based low temperature co-fired ceramics

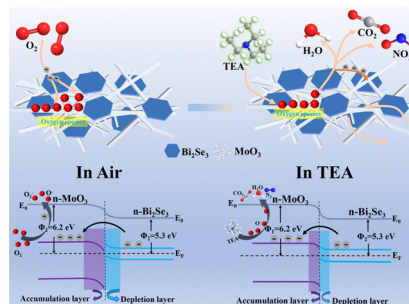
Haiqing Deng, Xin Qu, Pengxiang Gao, Yang Liu, Weilin Chen, Xiuli Chen and Huanfu Zhou*



16356

A heterojunction composite of Bi₂Se₃ nanosheets and MoO₃ nanobelts for a high-performance triethylamine sensor

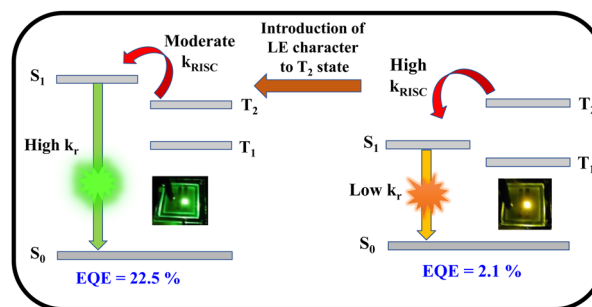
Xiangyun Tan, Li Wang, Xi Chen, Haoliang Zhang, Si Chen, Libing Qian, Zhiyuan Chen and Chungqing He*



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

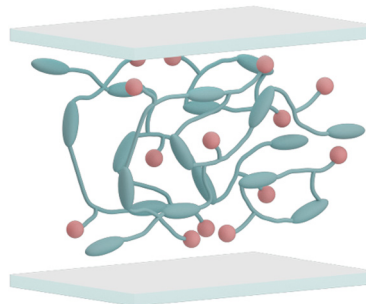
Nisha Yadav, Upasana Deori, Ezhakudiyyan Ravindran, Bahadur Sk and Pachaiyappan Rajamalli*



16377

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

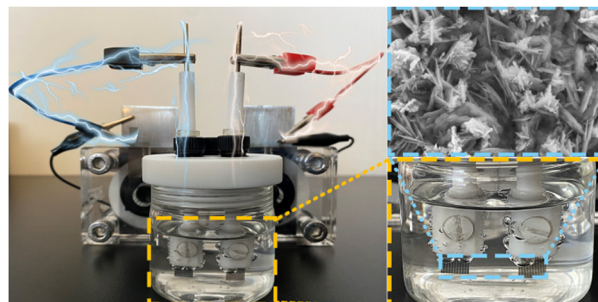
Gaurav K. Pande, Brian P. Radka, Joselle M. McCracken and Timothy J. White*



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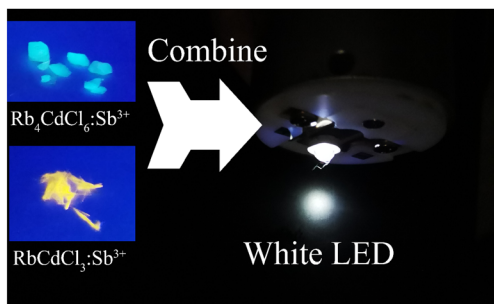
CoNi₂S₄@CoNi-LDH heterojunction grown on SSM as a highly efficient trifunctional catalyst for water-splitting and Zn–air batteries

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



PAPERS

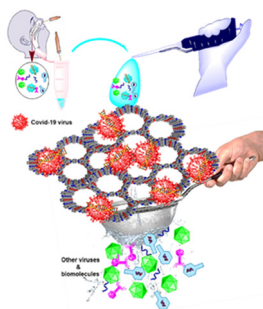
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Metal halides $\text{RbCdCl}_3\text{:Sb}^{3+}$ and $\text{Rb}_4\text{CdCl}_6\text{:Sb}^{3+}$ with yellow and cyan emissions obtained via a facile hydrothermal process

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

16411

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

Manala Tabu Mbumba, Davy Maurice Malouangou, Jadel Matondo Tsiba, Muhammad Waleed Akram, Luyun Bai, Yifan Yang and Mina Guli*

