

# Journal of Materials Chemistry C

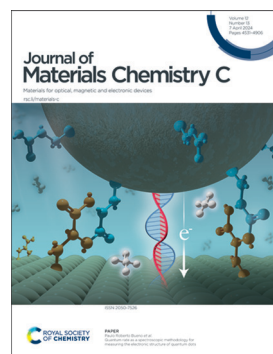
Materials for optical, magnetic and electronic devices

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### Cover

See Paulo Roberto Bueno *et al.*, pp. 4606–4617.  
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## REVIEWS

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### Unlocking the potential of perovskite-based nanomaterials for revolutionary smartphone-based sensor applications

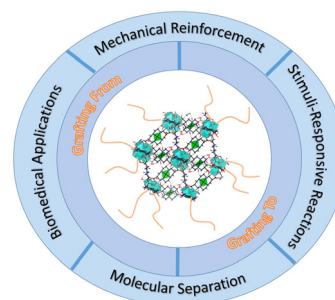
Dan Li,\* Pengfei Zhuang and Cai Sun\*



4562

### Polymer-grafted metal–organic frameworks: design, synthesis, and applications

Xiaozhou Yang, Tzu-Ching Cheng and Amanda J. Morris\*



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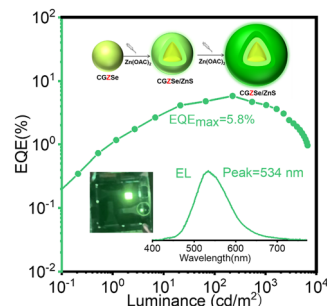
Fundamental questions  
Elemental answers

## COMMUNICATIONS

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### Rationally designed synthesis of bright Cu–Ga–Zn–Se-based nanocrystals for efficient green quantum-dot light-emitting diodes

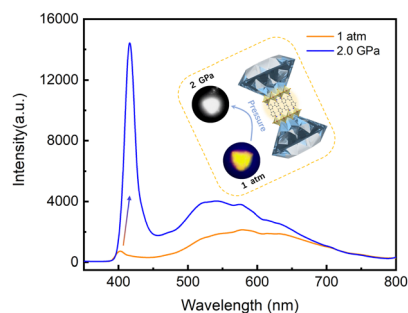
Ruixin Sun, Jinxing Zhao, Ouyang Lin, Yu Li, Xiulin Xie, Wentao Niu, Zhe Yin\* and Aiwei Tang\*



4599

### Pressure enables high-standard white light emission and significant emission enhancement in a 2D halide perovskite

Xue-Zhou Zhao, Fei-Fei Gao, Wei Li,\* Zhi-Gang Li, Ying Zhang, Kai Li, Huan Hu, Weizhao Cai, Jijie Zhang\* and Xian-He Bu

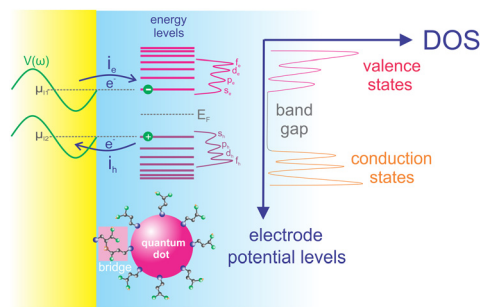


## PAPERS

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### Quantum rate as a spectroscopic methodology for measuring the electronic structure of quantum dots

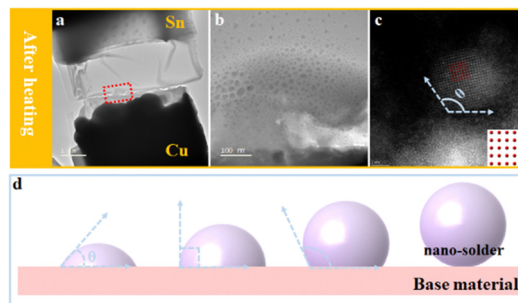
Edgar Fabian Pinzón, Laís Cristine Lopes, André Felipe Vale Fonseca, Marco Antonio Schiavon and Paulo Roberto Bueno\*



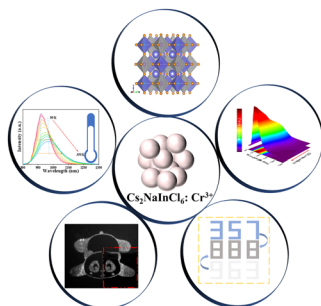
4618

### In situ transmission electron microscopy (TEM) study on the structural evolution behavior of nano Sn sheets under a thermal field

Xia Zhou, Junwei Zhang, Hongli Li, Cong Ma, Yiqun Zhao, Hong Zhang\* and Yong Peng\*



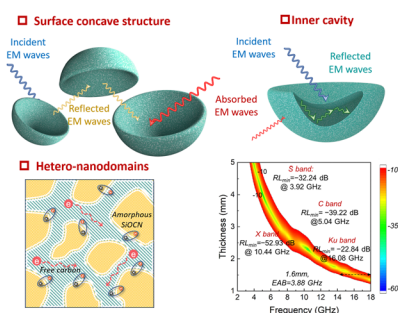
4627



### Near-infrared Cr<sup>3+</sup>-doped lead-free halide perovskite microcrystals for information encryption and temperature thermometry

Wei Zhao, Li Li,\* Faling Ling, Yongjie Wang,\* Guotao Xiang, Xianju Zhou, Sha Jiang, Zhiyu Yang, Yongbin Hua and Jae Su Yu\*

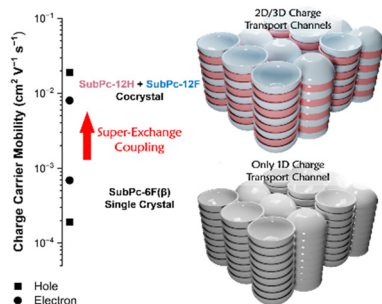
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### Polymer-derived silicon oxycarbonitride bowls with hollow structures and hetero-nanodomains for electromagnetic wave absorption

Rupan Xu, Jie Zhou, Weiyan Huang, Gaoyuan Yu, Liqun Guo, Xiaogu Huang and Gaofeng Shao\*

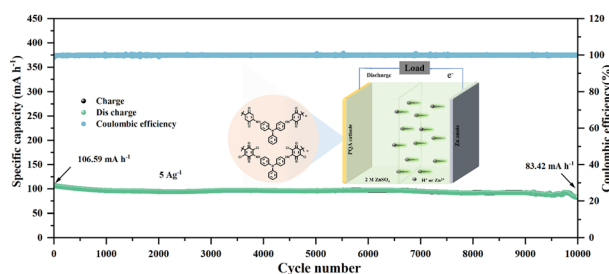
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### Subphthalocyanine semiconducting cocrystals with efficient super-exchange coupling

Lingyan Sun, Yuan Guo,\* Dan He, Barun Dhara, Fei Huang, Yuanping Yi, Daigo Miyajima\* and Cheng Zhang\*

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### Quinone-amine polymers prepared by simple precipitation polymerization and used as cathodes for aqueous zinc-ion batteries and electrochromic materials

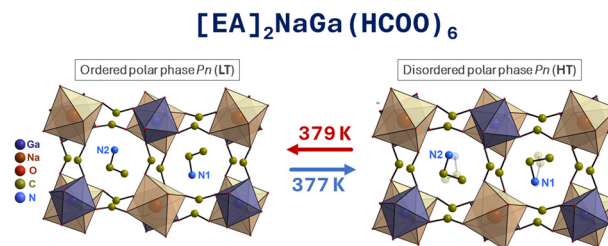
Jinli Liang, Yanjun Hou,\* Yamei You, Liyan Dong, Binhua Mei and Haijun Niu\*



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### Mechanism of isosymmetric polar order–disorder phase transition in pyroelectric $[\text{CH}_3\text{CH}_2\text{NH}_3]_2\text{NaGa}(\text{HCOO})_6$ double perovskite

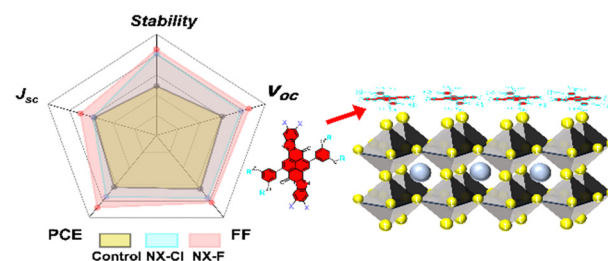
Maciej Ptak,\* Adam Kabański, Błażej Dziuk, Sergejus Balciunas, Gediminas Usevicius, Jan K. Zaręba, Juras Banys, Mantas Simenas,\* Adam Sieradzki and Dagmara Stefańska



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### Halogen substitution of perinone-based cathode interfacial materials for high-efficiency inverted perovskite solar cells

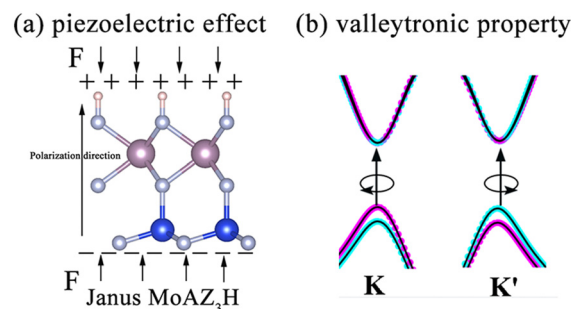
Shengxiong Zhang, Tianyu Xu, Peiyu Wu, Jun Pan, Wenjun Zhang\* and Weijie Song\*



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### Novel valleytronic and piezoelectric properties coexisting in Janus $\text{MoAZ}_3\text{H}$ ( $\text{A} = \text{Si}$ , or $\text{Ge}$ ; $\text{Z} = \text{N}$ , $\text{P}$ , or $\text{As}$ ) monolayers

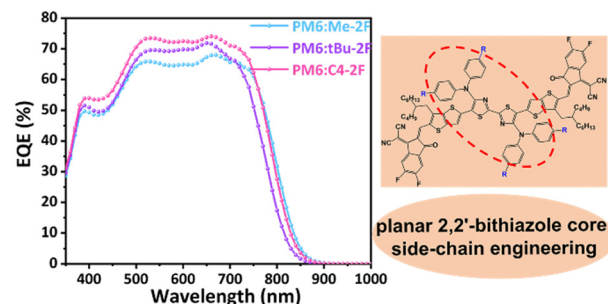
Xiaolin Cai,\* Guoxing Chen, Rui Li, Zhixiang Pan and Yu Jia\*



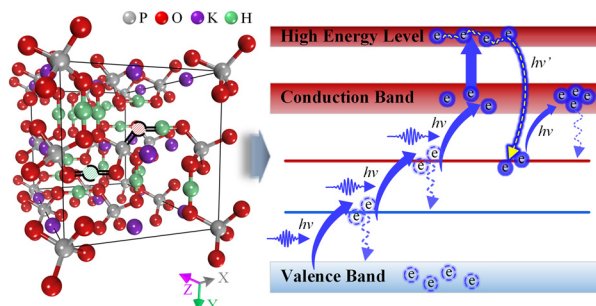
4690

### Non-fused ring electron acceptors employing diphenylamine substituted 2,2'-bithiazole cores for organic solar cell applications

Shuo-Jun Wang, Yi Lin, Fangliang Dong, Zaifei Ma,\* Zheng Tang\* and Ming Wang\*



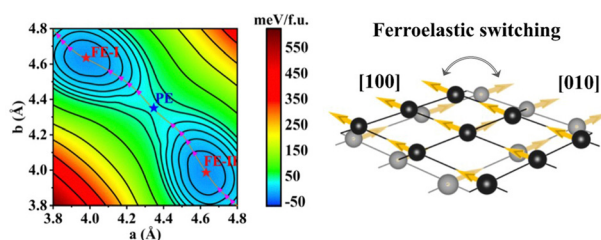
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### Quantitative identification of deposited energy in UV-transmitted KDP crystals from perspectives of electronic defects, atomic structure and sub-bandgap disturbance

Wenyu Ding, Linjie Zhao,\* Mingjun Chen, Jian Cheng,\* Zhaoyang Yin, Qi Liu, Guang Chen and Hongqin Lei

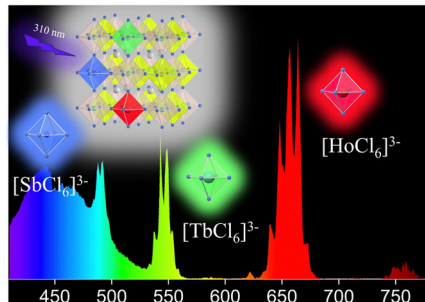
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### Direction control of the easy magnetization axis in the magnetic GdN and GdNX (X = F, Cl) monolayers

Lu Chen, Zhihao Gao, Xuhong Li, Zhifen Luo, Ziyu Niu, Tengfei Cao, Junqin Shi and Xiaoli Fan\*

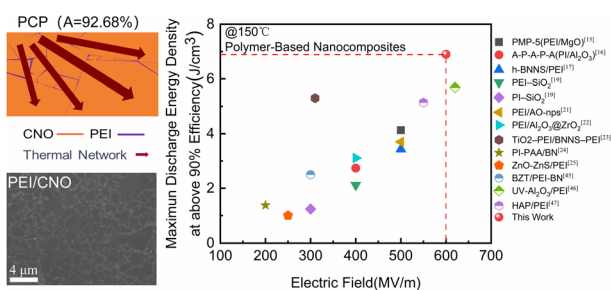
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### Realizing efficient photoluminescence spectral modulation via $\text{Sb}^{3+}/\text{Ln}^{3+}$ co-doping in $\text{Cs}_2\text{NaNCl}_6$ double perovskites

Shuai Li, Chunrong Zhu, Jinjiang Wang, Zheling Zhang, Dongjie Wang, Yiwen Chen, Doudou Zhang, Jing Wang and Jian Zhang\*

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### Langmuir–Blodgett assisted alignment of 2D nanosheets in polymer nanocomposites for high-temperature dielectric energy storage applications

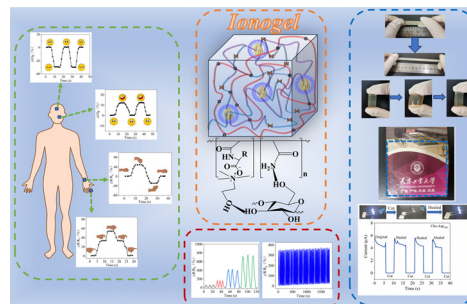
Cong Yu, Jian Wang, Jingjing Yan, Jianlong Xia and Xin Zhang\*



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### Polyionic liquid ionogels formed *via* hydrophobic association for flexible strain sensors

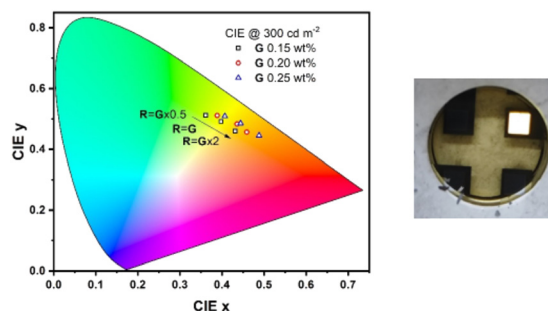
Hao Ren, Xiaoling He,\* Yan Long, Qianqian Li, Saisai Li and Xuanping Zhou



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### Solution-processed dendrimer-based bis-tridentate iridium(III) complexes with red, green, and blue phosphorescence for white OLEDs

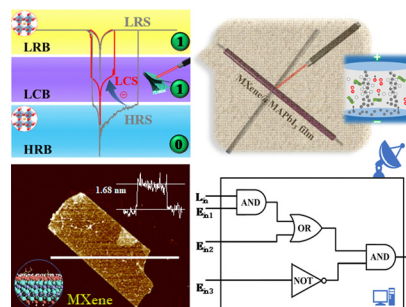
V. Pandit, J. Jang, C. S. K. Ranasinghe, P. L. Burn,\* E. V. Puttock and P. E. Shaw



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### NIR-triggered logic gate in MXene-modified perovskite resistive random access memory

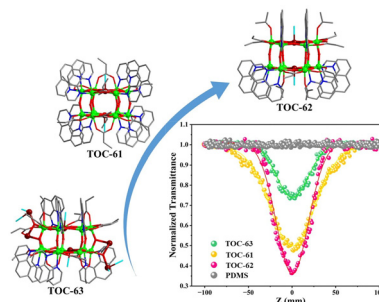
Rongbin Li, Yan Sun, Qianyu Zhao, Xin Hao, Haowei Liang, Shengang Xu, Yingliang Liu,\* Xiaoman Bi\* and Shaokui Cao\*



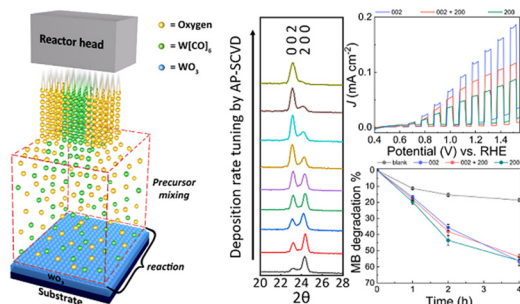
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### Optical limiting effects of 1,10-phenanthroline functionalized heterometallic Sn–Ti oxo clusters with distinct $\pi \cdot \cdot \pi$ interactions

Hui-Fang Zhao, Wei-Zhou Chen, San-Tai Wang, Shumei Chen,\* Jian Zhang and Lei Zhang\*



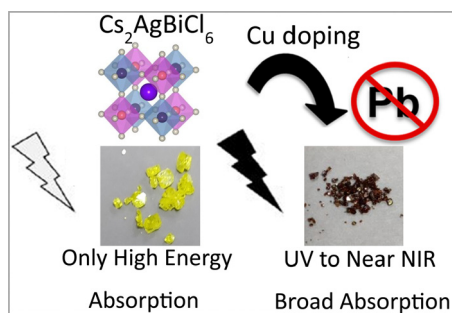
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### Low-temperature open-atmosphere growth of $\text{WO}_3$ thin films with tunable and high-performance photoresponse

Zhuotong Sun, Subhajit Bhattacharjee, Ming Xiao,\*  
Weiwei Li, Megan O Hill, Robert A. Jagt,  
Louis-Vincent Delumeau, Kevin P. Musselman,  
Erwin Reisner and Judith MacManus-Driscoll\*

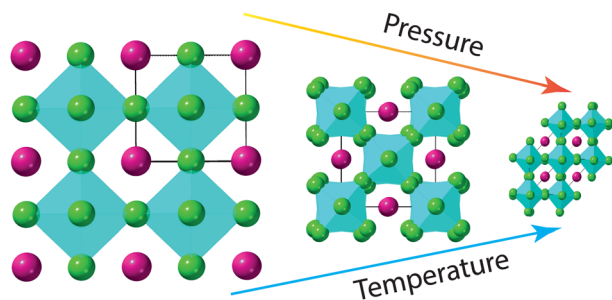
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### Extending the absorption of $\text{Cs}_2\text{AgBiCl}_6$ double perovskite to the near infra-red region by copper doping

Raman Singh Lamba, Shubham Kumar, Pulkit Dhankhar,  
Priyesh Yadav, Swati Khurana, Varsha Jha, Sahil Singh,  
Aswathi Konur and Sameer Sapra\*

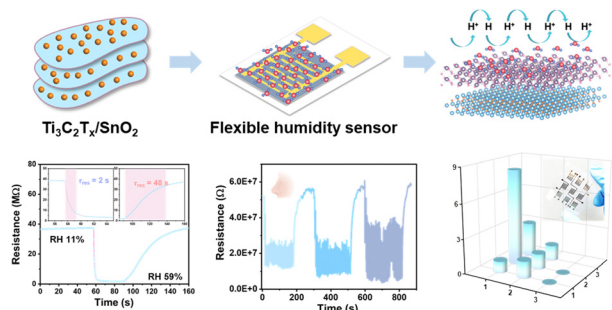
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### Thermodynamic study of $\text{CsCaCl}_3$ using neutron diffraction

Craig L. Bull,\* Christopher J. Ridley, Nicholas P. Funnell,  
Sumit Konar and James Cumby

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### Fast response flexible humidity sensors based on $\text{Ti}_3\text{C}_2\text{T}_x$ MXene-heterostructures for multifunctional applications

Yutong Han, Huina Cao, Yuzhong Cao, Xiaolu Wen,  
Yu Yao and Zhigang Zhu\*

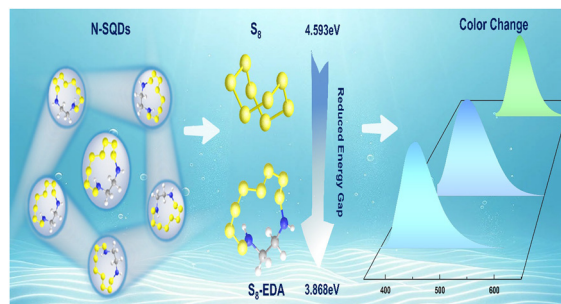




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### Tailoring the energy gap to promote long wavelength emission of nitrogen-doped sulfur quantum dots *via* dual functional ethylenediamine

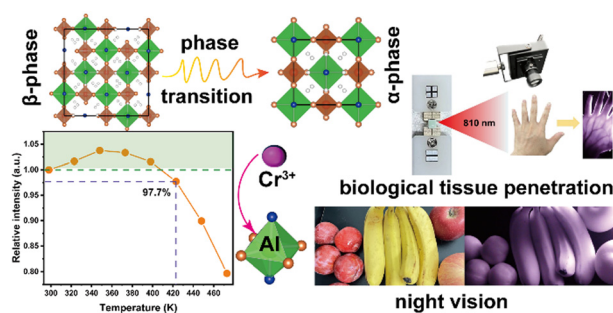
Guoyong Huang, Zitong Wei, Xiaona Zhang, Wenyi Lu, Yizhang Du, Yali Yin, Umme Hani Prova and Chunxia Wang\*



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### A broadband near-infrared emission Na<sub>3</sub>Al<sub>2</sub>(PO<sub>4</sub>)<sub>2</sub>F<sub>3</sub>:Cr<sup>3+</sup> phosphor exhibiting zero photoluminescence quenching at 398 K

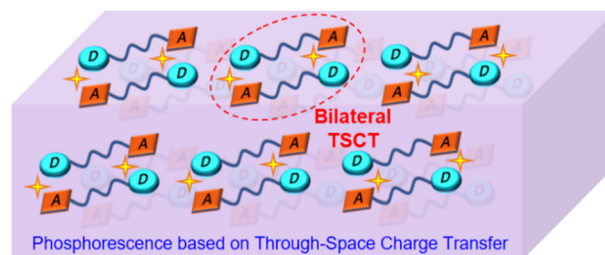
Huijie Wu, Sisi Liang,\* Weixiong You, Le Liu, Yongwei Guo, Shujian Wang, Liping Song, Zihao Wang and Haomiao Zhu\*



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### Through-space charge transfer within single-component organic crystal: visual detection and rational regulation

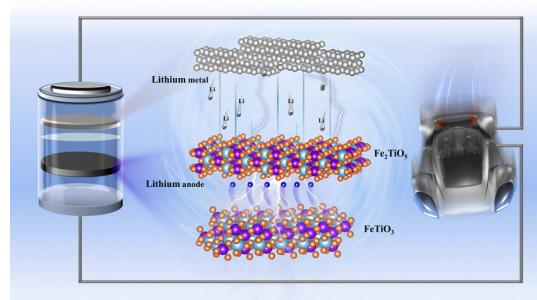
Zhenjiang Liu, Jia Ren, Hui Zhang, Yunsheng Wang, Xiaoning Li, Jiaqiang Wang, Manman Fang, Jie Yang,\* Ben Zhong Tang\* and Zhen Li\*



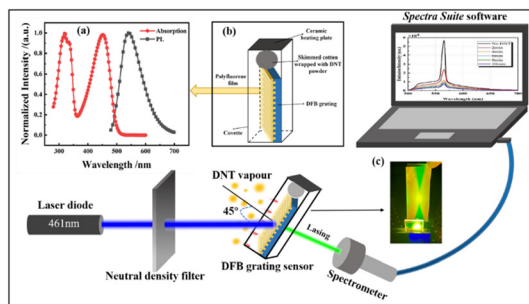
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### Structural evolution and lithium-storage mechanism of the FeTiO<sub>3</sub>@Fe<sub>2</sub>TiO<sub>5</sub> endogenous heterojunction

Yang Chen, Ye Li, Xiaohuan Wang,\* Huijun Kang, Zhiming Shi, Guojun Ji and Zhipeng Yuan



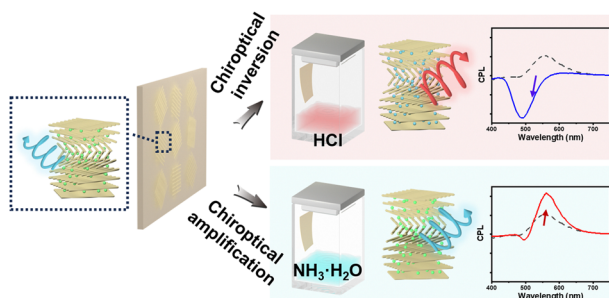
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### A distributed-feedback grating excited by a CW laser diode for portable detection of explosive vapors with high sensitivity and stability

Liming Wang, Wei Lu, Meijuan Zhang, Shengnan He,\*  
Huiwen Fang, Yujiao Wei, Yilin Hong\* and Weihua Wang

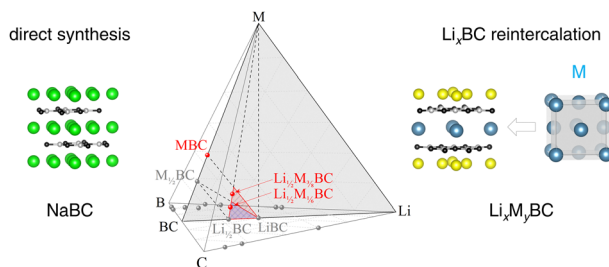
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### Stimuli-responsive circularly polarized luminescence with chiroptical amplification and inversion enabled by cholesterically assembled bio-materials

Qing Miao, Xi Wang, Bowen Jin, Yang Chen, Yi Zhou,  
Rui Xiong, Xiao Meng\* and Chunhong Ye\*

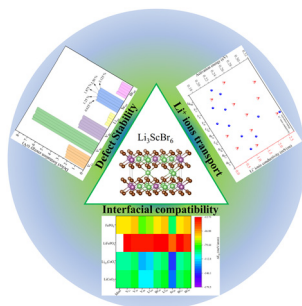
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### Prospect of high-temperature superconductivity in layered metal borocarbides

Charley R. Tomassetti, Gyanu P. Kafle, Edan T. Marcial,  
Elena R. Margine and Aleksey N. Kolmogorov\*

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### Effects of neutral point defects on the solid-state electrolyte $\text{Li}_3\text{ScBr}_6$

Ming Jiang, Zhi-Wen Chen,\* Adwitiya Rao, Li-Xin Chen,  
Parvin Adeli, Patrick Mercier, Yaser Abu-Lebdeh and  
Chandra Veer Singh\*



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The layered  $\text{RuBr}_3\text{--RuI}_3$  honeycomb system

Danrui Ni, Xianghan Xu and Robert J. Cava\*

