

# Journal of Materials Chemistry C

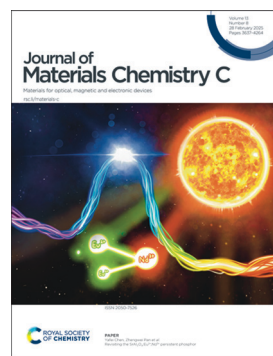
Materials for optical, magnetic and electronic devices

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### Inside cover

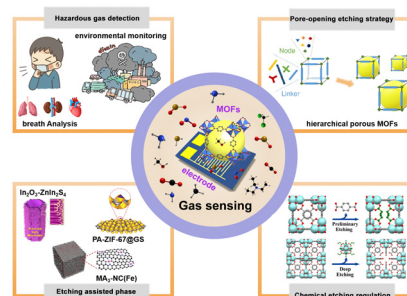
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## REVIEWS

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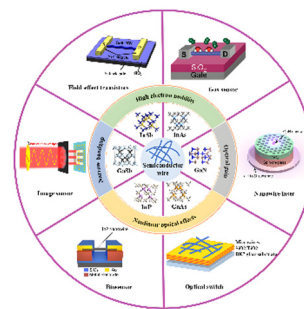
Zhuo Liu, He Lv and Yan Xu\*



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### III–V semiconductor wires for optical switches in solid-state lasers

Linlu Qiu, Yifan Zhao, Jieyu Jiang, Fei Lou,\* Shuaiyi Zhang, He Yang, Baitao Zhang, Xia Wang and Jingliang He



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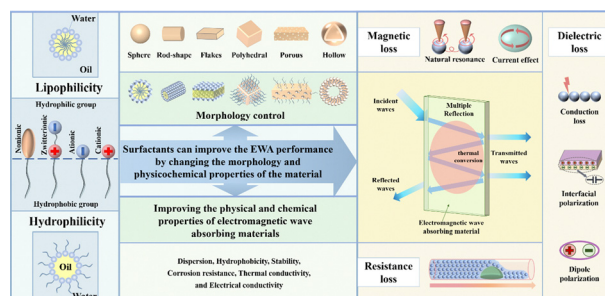
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Zhengtang Su, Chao Chen, Yuhang Long, Gang Chen,\*  
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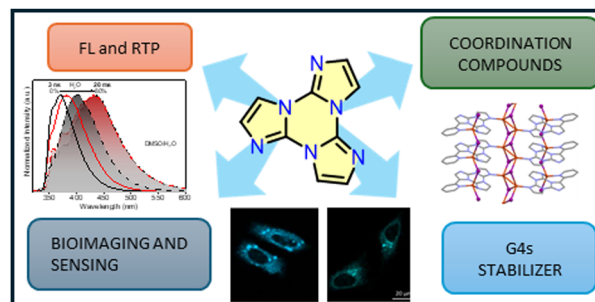


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Alessandra Forni, Daniele Malpicci, Daniele Maver,  
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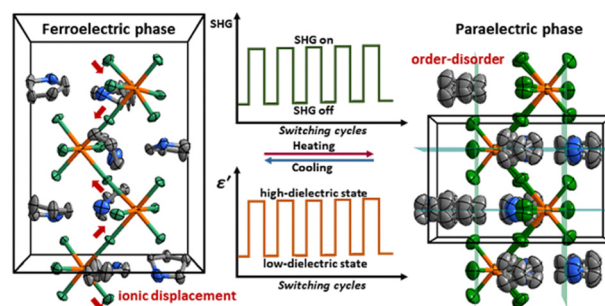


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### A one-dimensional organic-inorganic hybrid ferroelectric exhibiting a dielectric-optical duple switch

Qian-Jun Gu, Yu-Qiao Tong, Shi-Qing Yin, Ping Wang,  
Peng-Peng Gong, Ya-Juan Li, Yue Fang, Yang Zhao and  
Bo Huang\*

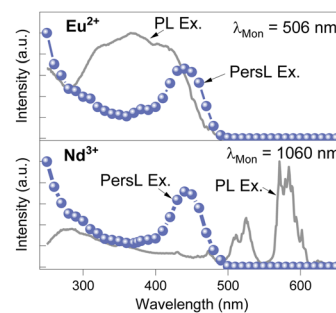


## PAPERS

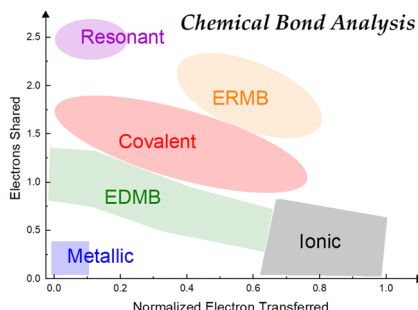
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### Revisiting the SrAl<sub>2</sub>O<sub>4</sub>:Eu<sup>2+</sup>,Nd<sup>3+</sup> persistent phosphor

Rola Kuban, Yafei Chen\* and Zhengwei Pan\*



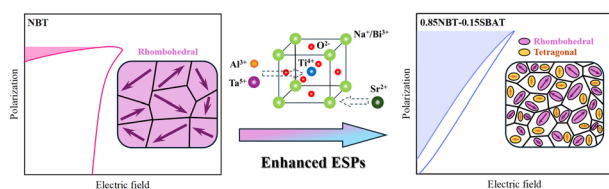
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### A unified theory of electron-rich and electron-deficient multicenter bonds in molecules and solids: a change of paradigms

H. H. Osman,\* P. Rodríguez-Hernández, A. Muñoz and F. J. Manjón\*

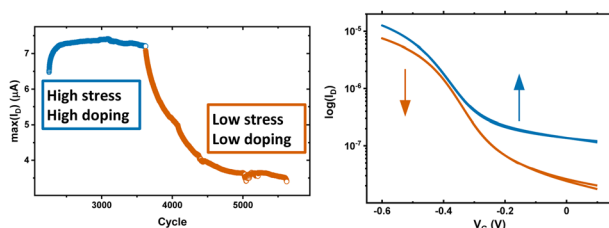
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### Enhanced energy storage performances under low electric fields in $(1 - x) \text{Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3 - x\text{Sr}_{0.7}\text{Bi}_{0.2}(\text{Al}_{0.5}\text{Ta}_{0.5})\text{O}_3$ relaxor ferroelectric ceramics: impact of $\text{Sr}_{0.7}\text{Bi}_{0.2}(\text{Al}_{0.5}\text{Ta}_{0.5})\text{O}_3$ on structure and electrical properties

Jiangnan Hu, Xiangping Jiang,\* Chao Chen, Na Tu, Xin Nie, Chong Zhao, Dandan Wei, Canxu Zheng, Jialin Gu, Qian Yuan and Xiaokun Huang\*

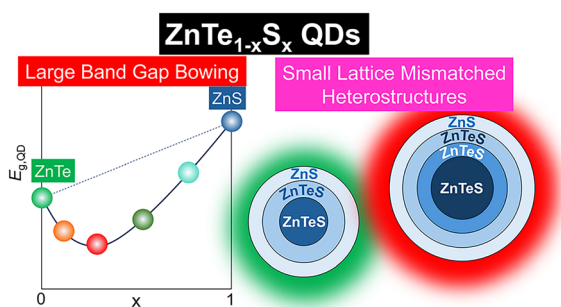
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### Reversible stress-induced doping and charge trap generation in IDT-BT EGFETs

Axel Luukkonen, Jonas Jern, Qiao He, Martin Heeney and Ronald Österbacka\*

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### Design of low-lattice-mismatch type-I heterostructures of zinc chalcogenide and synthesis of ZnTeS quantum dots as key materials for realizing green and red emission

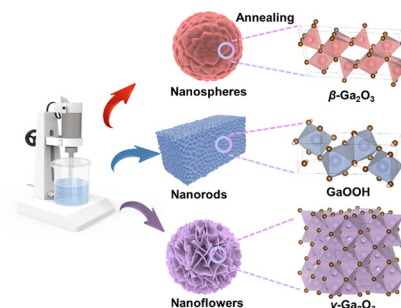
Rantaro Matsuo, Masao Kita, Satoshi Tsukuda\* and Takahisa Omata\*



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### Ultrasonication-assisted synthesis of morphology-controlled gallium oxide nanoparticles for high-performance photoelectronic device applications

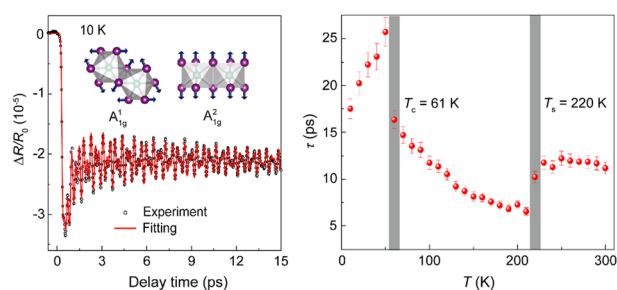
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### Ultrafast carrier and coherent phonon dynamics in van der Waals ferromagnet CrI<sub>3</sub>

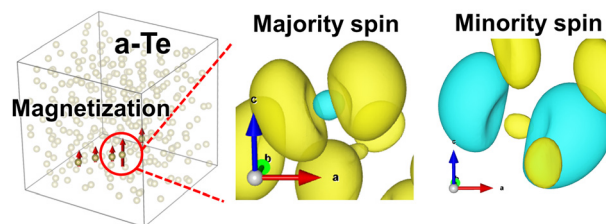
Chunyang Gou, Junyuan Zhang, Yang Mi\* and S. N. Luo



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### Intrinsic magnetism in semiconducting bulk amorphous tellurium

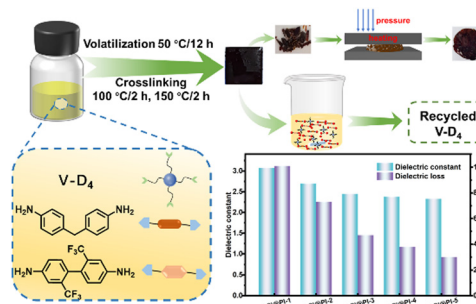
Jongchan Kim, Myung Mo Sung and Kyeongjae Cho\*



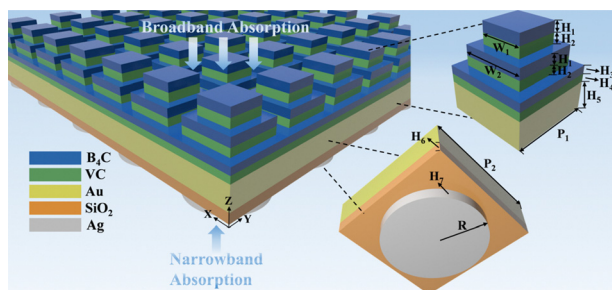
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### Vanillin-grafted organosilicon backbone polyimide resins with low dielectric, reprocessing and monomer recovery properties

Guoming Yuan, Hui Yang, Zhijun Liu, Yuemiao Zhang, Yanhan Tao, Bo Yang, Kun Wu,\* Jun Shi and Li Yang



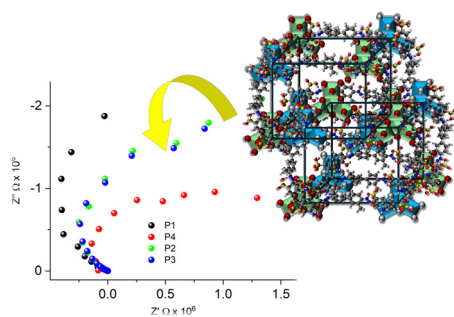
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### Analysis of solar harvesting and refractive index sensing of multifunctional metamaterial perfect absorbers based on Ag discs and B<sub>4</sub>C–VC cube films

Jiaying Jiang, Yingting Yi, Tangyou Sun, Qianju Song, Zao Yi,\* Chaojun Tang, Qingdong Zeng, Zhimin Liu and Pinghui Wu

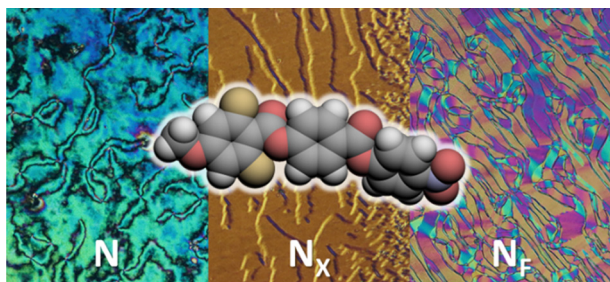
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### Mixed metal conductive MOFs constructed from Trypan blue linked metal nodes: characteristic features and electrochemical performance

Shubhangi Shukla, Naveen Narasimhachar Joshi, Sachin Kadian, Siba Sundar Sahoo and Roger J. Narayan\*

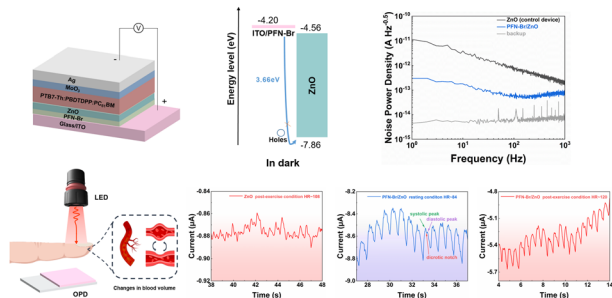
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### The role of fluorine substituents in the formation of the ferroelectric nematic phase

Ewan Cruickshank,\* Rebecca Walker, Grant J. Strachan, Ewa Górecka, Damian Pocięcha, John M. D. Storey and Corrie T. Imrie

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### High detectivity ternary near-infrared organic photodetectors based on double electron transport layer for health monitoring

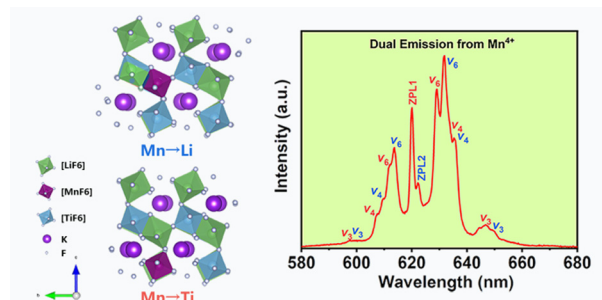
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### Enhanced chromaticity and dual emission in double-site Mn<sup>4+</sup>-activated KLiTiF<sub>6</sub> red phosphors for wide color gamut displays

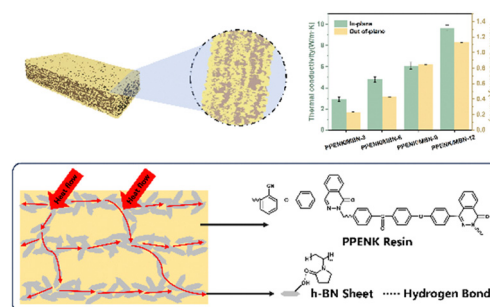
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### Research on high thermal conductivity PPENK/PVP modified BN electrospinning hot-pressed multifunctional nanocomposite films

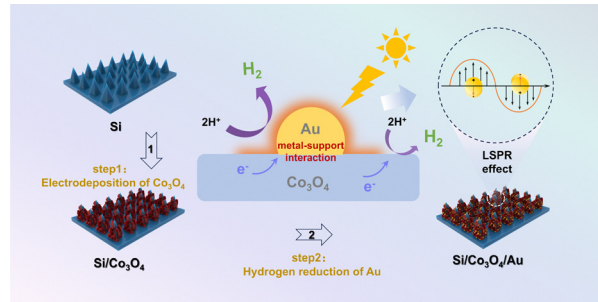
Jingyi Wang, Lishuai Zong, Yuhang Wang, Zichun Ding, Runze Liu, Jinyan Wang, Xigao Jian and Chenghao Wang\*



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### The Au nanoparticle-induced localized surface plasmon resonance effect and synergistic catalytic sites in Au/Co<sub>3</sub>O<sub>4</sub>/Si pyramid arrays for photoelectrochemical hydrogen evolution

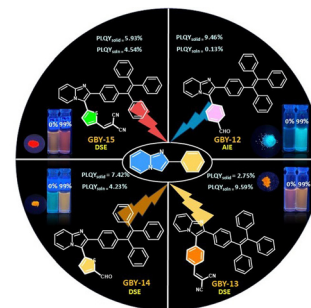
Yu Wang, Chenyu Yan, Honggui Wang and Ya Zhang\*



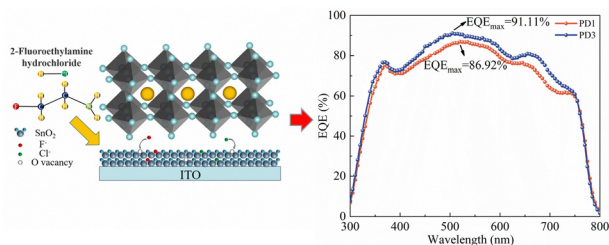
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### Engineering of imidazo[1,2-a]pyridine into multifunctional dual-state emissive (DSE) luminogens for hydrazine sensing and cell-imaging

Gauravi Yashwantrao, Prajakta Gosavi, Vaishnavi Naik, Monalisha Debnath, Saona Seth, Purav Badani, Rohit Srivastava and Satyajit Saha\*



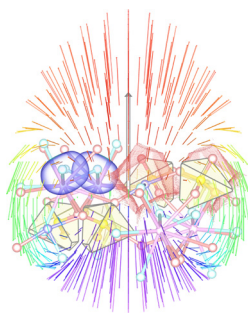
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### Defect passivation of SnO<sub>2</sub> doped with 2-FN for high-performance perovskite detectors

Zuhuan Lu, Yukun Wang,\* Jing Zhang, Xujianeng Du and Wenhong Sun\*

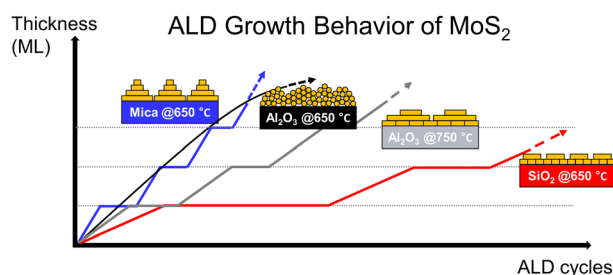
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### Evaluation of microscopic origins of optical responses: based on rigorous atomic space tessellating

Yang Chi\*

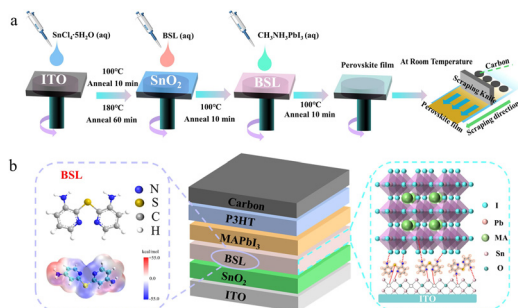
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### Unraveling the influence of substrate surface and temperature on microstructural evolution of crystalline MoS<sub>2</sub> in atomic layer deposition

Seung Ho Ryu and Seong Keun Kim\*

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### Buried interface passivation with bis(3-aminopyrid-2-yl) sulfide for carbon-based perovskite solar cells

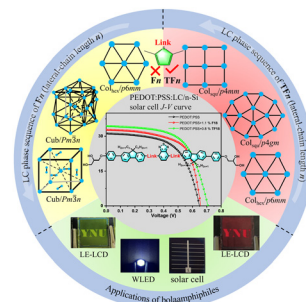
Jiating Wang, Xinrui Gao, Yingjia Zhuansun, Decai Zhu, Jie Liu, Long Tang\* and Qingbo Wei\*



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### 9,9-Dialkylfluorene-*alt*-benzothiadiazole-based bolaamphiphiles with the formation of complex self-assembled liquid-crystalline phases of a cubic A15 network and Col<sub>sq</sub>/*p4gm* at the triangle–square transition

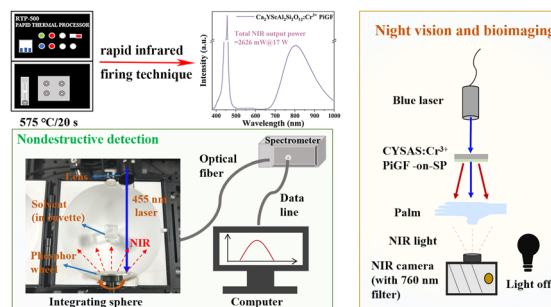
Shibo Chen, Haixia Wu, Zilong Guo, Qingqing Han, Jiaming Liu, Yu Yang\* and Xiaohong Cheng\*



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### Ca<sub>2</sub>YScAl<sub>2</sub>Si<sub>2</sub>O<sub>12</sub>:Cr<sup>3+</sup> phosphor-in-glass film for laser-driven high-power near-infrared lighting

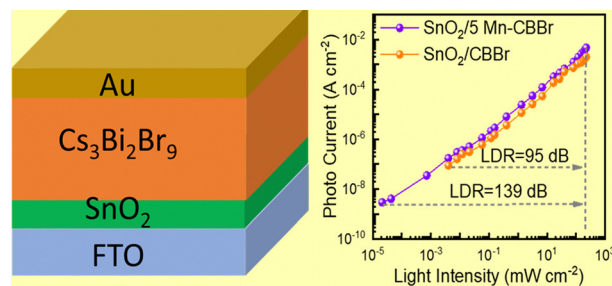
Yi Lin, Gaoming Dong, Hang Lin,\* Bo Wang, Pengfei Wang, Ju Xu, Yao Cheng, Yan Xiong and Yuansheng Wang\*



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### High photodetector responsivity and weak light detection in a manganese doped lead-free low dimensional perovskite

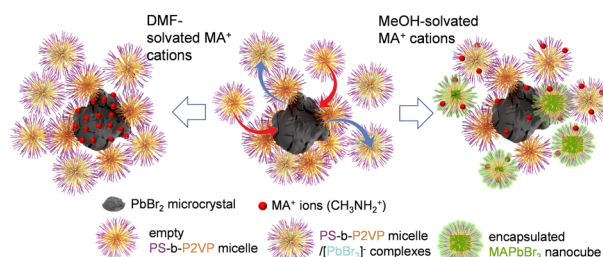
James Harry Martin, Zhirong Liu, Muhammed P. U. Haris, Luis Lezama, Mingkui Wang,\* Shahzada Ahmad\* and Samrana Kazim\*



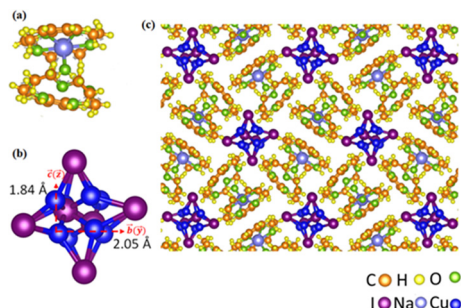
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### Room-temperature synthesis of highly luminescent methylammonium lead bromide nanocubes encapsulated in block copolymer micelles: impact of solvent choice on crystallization and stability

Belda Amelia Junisu, Ya-Sen Sun\* and Bo-Cheng Zhao



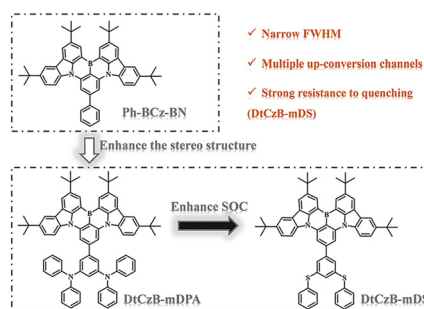
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### Ultra broadband yellow emitting lead-free metal halide perovskite like compounds with near-unity emission quantum yields

Sayed Ali Khan,\* Noor Zamin Khan, Jahangeer Ahmed, Marcin Runowski, Saad M Alshehri, Simeon Agathopoulos, Simon J. Teat and Jing Li\*

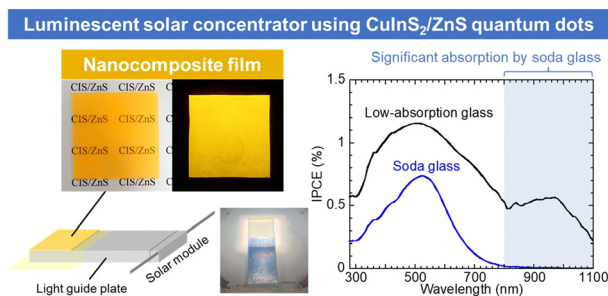
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### Enhancing the stereo structure *via* bulky peripheral groups to improve resistance to concentration quenching in OLEDs

Haotian Yue, Yongxing Tian, Shan Huang, Hanrui Su, Hongbo Shao, Qiang Zhang, Runda Guo\* and Lei Wang

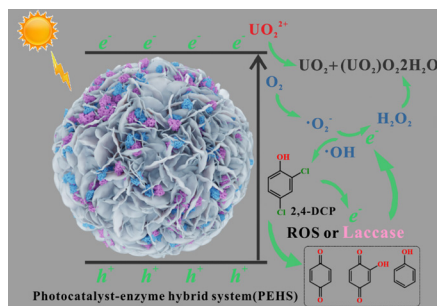
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### Fabrication of CuInS<sub>2</sub>/ZnS quantum dot nanocomposite films and investigation of their influence on performance of soda glass-based luminescent solar concentrators

Yu Imakiire, Yoshiki Iso\* and Tetsuhiko Isobe\*

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### Immobilization of laccase on different functional groups and degree of conjugation modified COFs for simultaneous photochemical-enzymatic removal of 2,4-dichlorophenol and uranium (U(vi))

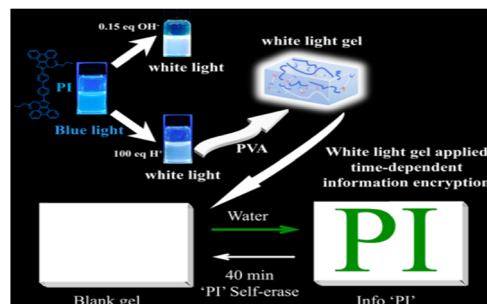
Xin Zhong,\* Zhehong Ji, Qian Ling, Lifu Sun and Baowei Hu



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### Dual-channel regulation of a single white-light-emitting compound and its application in time-dependent information encryption

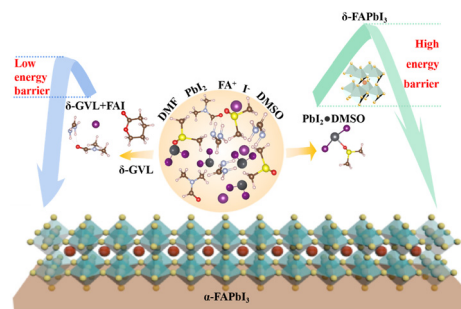
Yuehua Liang, Jiuzhi Wei, Juan Zhang, Tingting Zhang, Caiyuan Guo, Yanyan Li, Xinxian Ma,\* Minghua Liu\* and Yun Yan\*



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### Equilibrating bonding energy between solvent and solute for optimized crystallization enables efficient perovskite solar cells

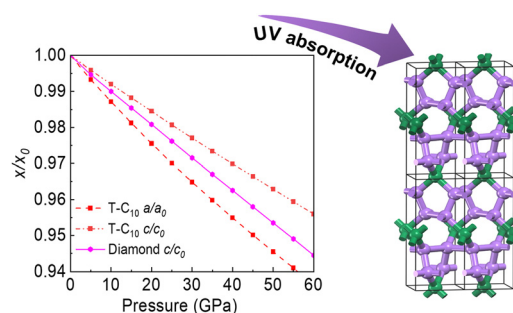
Hanzhi Zhang, Weihui Bi, Jin Wang,\* Peng Mao, Jun Lv, Shen Xing, Po-Chuan Yang, Guangtong Hai, Gaorong Han and Yufei Zhong\*



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### A superhard and superdense carbon allotrope with all- $sp^3$ bonded helical chains of five-membered rings

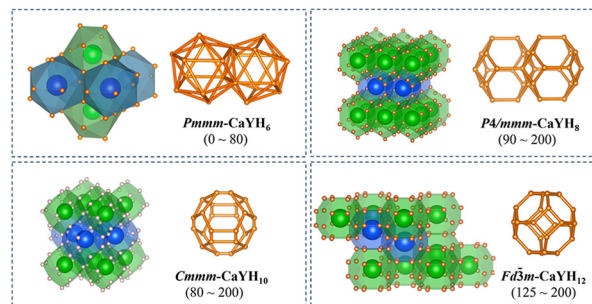
Yuan Tang, Meng Hu,\* Wenyuan Zhang, Jiwei Pang, Mengdong Ma, Penghui Li, Julong He and Jianning Ding



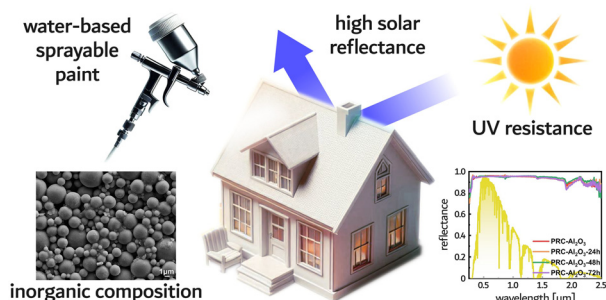
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### Prediction of pressure-induced superconductivity in the ternary systems $\text{CaYH}_{2n}$ ( $n = 3-6$ ) at moderate pressures

Jinghong Zhao, Bole Chen, Shichang Li,\* Ying Chang, Xu Yang, Mingyu Chen and Dengfeng Li\*



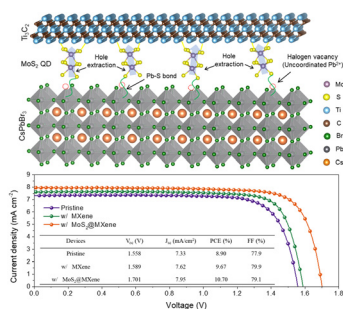
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### An inorganic water-based paint for high-durability passive radiative cooling

Siyuan Li, Xianglin Zhang, Yanfei Yang, Xin Li, Hongbo Xu, Juyan Zhao,\* Lorenzo Pattelli,\* Lei Pan,\* Jiupeng Zhao and Yao Li\*

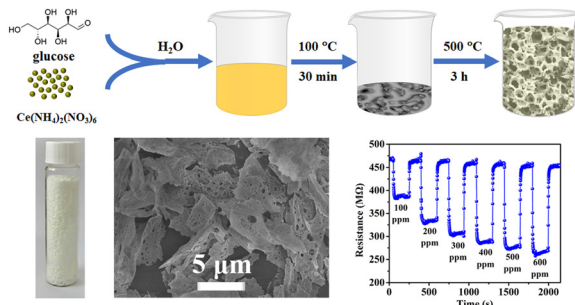
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### Boosting charge transfer with MoS<sub>2</sub>-grafted MXene interlayers for high-efficiency all-inorganic CsPbBr<sub>3</sub> perovskite solar cells with an ultrahigh voltage of 1.701 V

Qingwei Zhou,\* Hansheng Li, Fan Wu, Dan Chen, Fang Luo, Chucai Guo\* and Zhihong Zhu

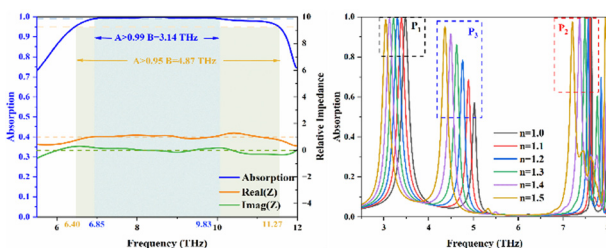
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### A bubble-templating strategy to construct CeO<sub>2</sub> aerogels and their potential application for fast detection of acetone

Sen Liu, Liang Zhao, Chengchao Yu, Yunpeng Xing, Hongda Zhang, Sihao Zhi, Teng Fei, Haiyan Zhang\* and Tong Zhang\*

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### A bifunctional tunable terahertz absorber based on a Fabry-Perot cavity: enabling broadband perfect absorption and refractive index sensing

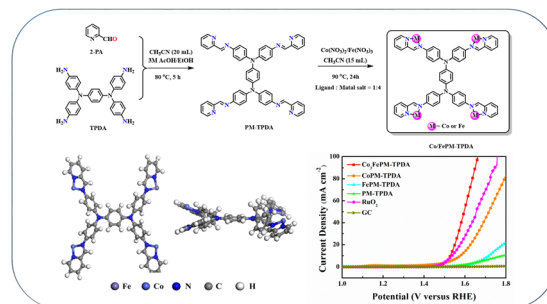
Jiaran Xiong, Chao Li,\* Dong Wang, Song Gao, Yue Che, Guozheng Wu and Mingyuan Guo



4170

### Big pyridyl Schiff base $\pi$ -conjugated skeleton based cobalt/iron metal complexes: bimetallic electrocatalysts for the oxygen evolution reaction

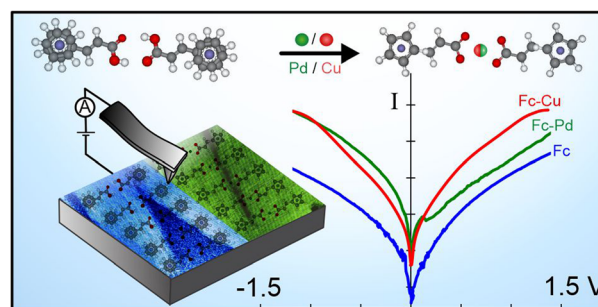
Yuwei Dong, Mingyu Wu, Yu Ren, Zhou Yu\* and Zhen Zhao\*



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### Enhancing the electronic-coupling and conductivity of a monolayer film of ferrocenyl molecules by Pd and Cu doping

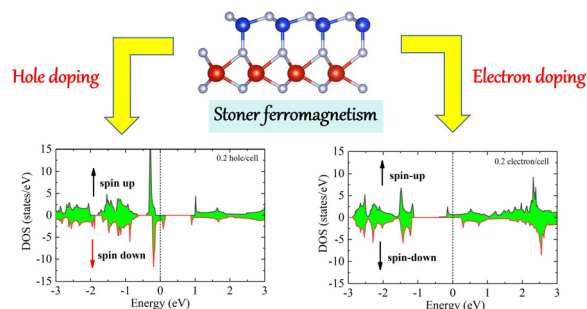
Sunny M. P. Gautam, Himani Malik, Vikash Meghwal, Sruthi Manoharan, Vinithra Gurunaryanan, Ramesh Ramapanicker and Thiruvancheril G. Gopakumar\*



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### Two-dimensional multiferroicity and half-metallicity of the carrier-doped 2H-VSiN<sub>3</sub> monolayer

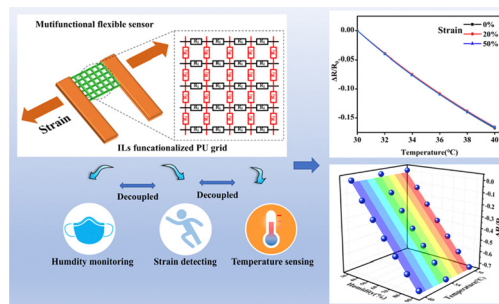
Long Gong, Ming-Yang Liu,\* Yao He and Kai Xiong



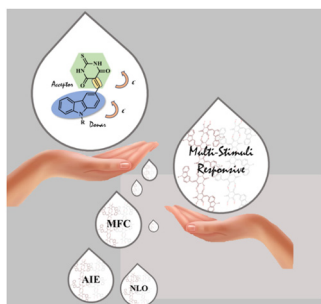
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### Topologically structured sensors with high linearity and dual-sensing signal decoupling

Huanyu Liu, Chengkai Luo, Yunhui Wu\* and Xinxing Zhang



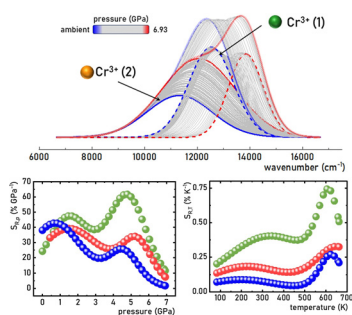
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### Bend, don't break: exploring the mechanochromic, AIE and nonlinear optical properties of carbazole–thiobarbituric acid hybrids

Meema Rasheed, R. Lakshmi, Parvathy O.C., Shandev P.P., Pramod Gopinath\* and Narayanapillai Manoj\*

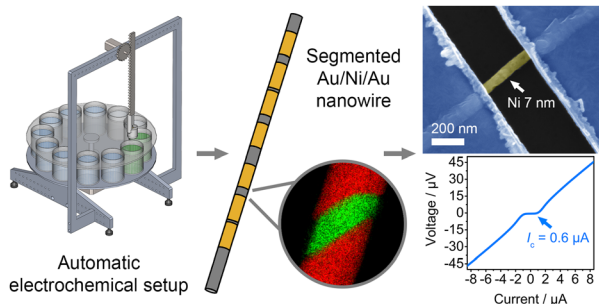
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### Highly sensitive ratiometric luminescence manometers based on the multisite emission of Cr<sup>3+</sup>

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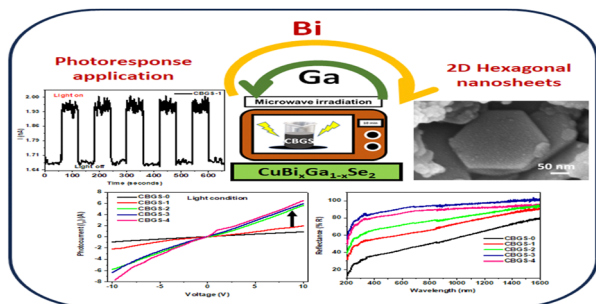
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### Automated manufacturing of segmented nanowires with thin ferromagnetic layers: a step towards miniature SFS Josephson junctions

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### 2D hexagonal CuBi<sub>x</sub>Ga<sub>1-x</sub>Se<sub>2</sub> nanosheets for a visible light photodetector

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