

Journal of Materials Chemistry C

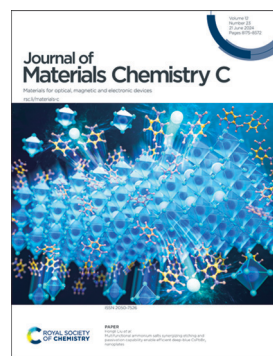
Materials for optical, magnetic and electronic devices

rsc.li/materials-c

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

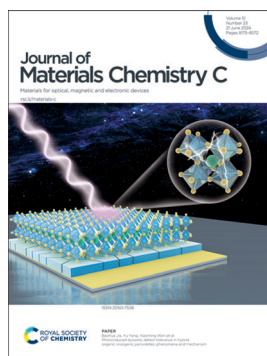
IN THIS ISSUE

ISSN 2050-7526 CODEN JMCCCX 12(23) 8175-8572 (2024)



Cover

See Hongli Liu *et al.*, pp. 8302–8308. Image reproduced by permission of Hongli Liu from *J. Mater. Chem. C*, 2024, 12, 8302.



Inside cover

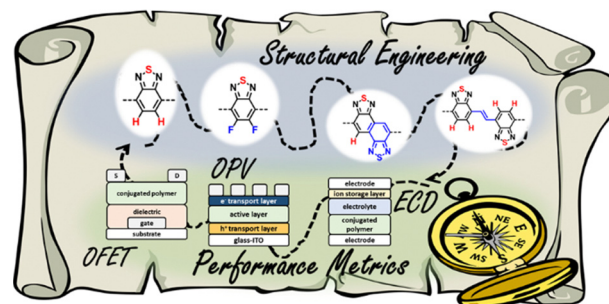
See Baohua Jia, Yu Yang, Xiaoming Wen *et al.*, pp. 8309–8319. Image reproduced by permission of Xiaoming Wen, Yu Yang and Baohua Jia from *J. Mater. Chem. C*, 2024, 12, 8309.

REVIEWS

8188

Conjugated polymers with near-infrared (NIR) optical absorption: structural design considerations and applications in organic electronics

Tanzida Zubair, Md Mahmudul Hasan, Raul S. Ramos and Robert M. Pankow*



8217

Stimuli responsive actuators: recent advances

Feng Du, Shu Wang, Zhihao Chen and Quan Li*



Advance your career in science

with professional recognition that showcases
your **experience, expertise and dedication**

Stand out from the crowd

Prove your commitment
to attaining excellence in
your field

Gain the recognition you deserve

Achieve a professional
qualification that inspires
confidence and trust

Unlock your career potential

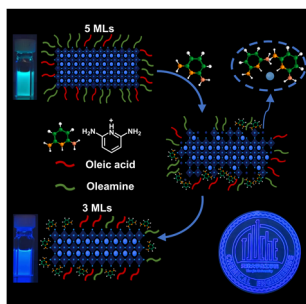
Apply for our professional
registers (RSci, RSciTech)
or chartered status
(CChem, CSci, CEnv)

Apply now

rsc.li/professional-development



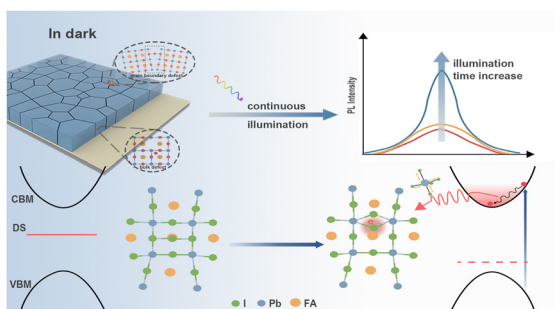
8302



Multifunctional ammonium salts synergizing etching and passivation capability enable efficient deep-blue CsPbBr₃ nanoplates

Yanyin Wang, Shirong Wang, Zhanpeng Qin, Jing Zhou, Sixiao Gu, Xianggao Li and Hongli Liu*

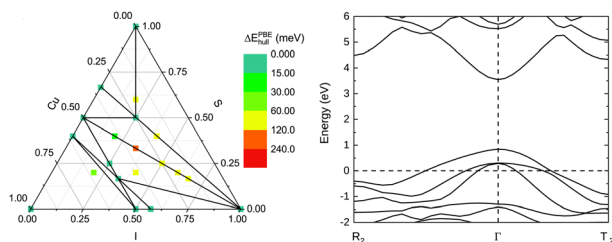
8309



Photoinduced dynamic defect tolerance in hybrid organic–inorganic perovskites: phenomena and mechanism

Guangsheng Liu, Qianwen Wei, Guijun Zhang, Mehri Ghasemi, Qi Li, Junlin Lu, Juan Wang, Baohua Jia,* Yu Yang* and Xiaoming Wen*

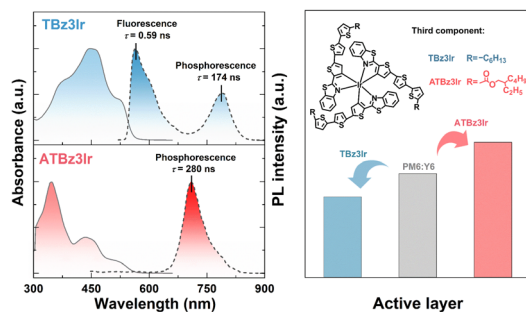
8320



Computational prediction and characterization of CuI-based ternary p-type transparent conductors

Michael Seifert, Tomáš Rauch, Miguel A. L. Marques and Silvana Botti*

8334



Significant differences in photophysical and photovoltaic properties of flexible chain terminated homoleptic tris-Ir(III) complexes

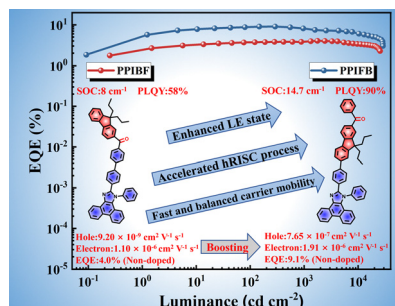
Duoquan You, Tianjian Yang, Aihua Zhou, Siyuan Li, Kaiqi Lv, Huili Ma, Hongliang Zhong and Youtian Tao*



8343

Efficient non-doped blue electroluminescence based on phenanthroimidazole–benzoylfluorene hybrid molecules with high spin–orbit coupling and balanced charge mobilities

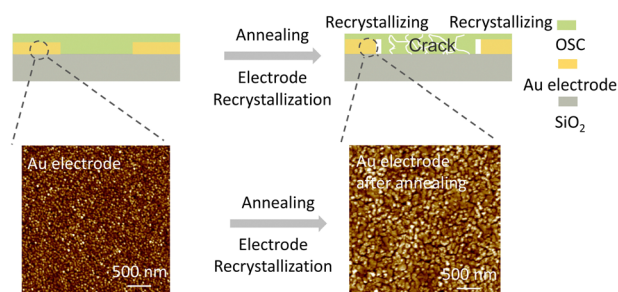
Yannan Zhou, Mingliang Xie, Xin Wang, Mizhen Sun, Huayi Zhou, Shi-Tong Zhang,* Wenjun Yang and Shanfeng Xue*



8351

Impact of electrode recrystallization on the stability of organic transistors

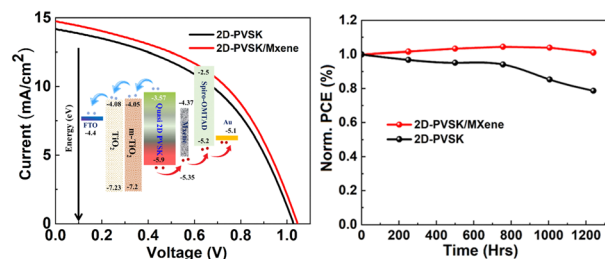
Shougang Sun, Hanyang Guan, Jinbo He, Jiannan Qi, Xiaosong Chen,* Liqiang Li and Wenping Hu



8357

MXenes as a hole transport interfacial layer for efficient and air-stable quasi-2D perovskite solar cells

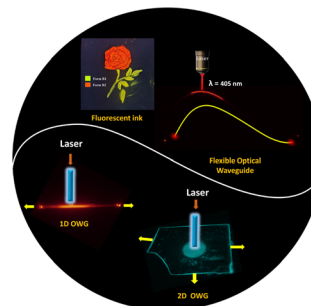
Sanjay Sahare,* Mykhailo Solovan, Marina Smirnova, Błażej Scheibe, Mariusz Jancelewicz, Grzegorz Nowaczyk, Mateusz Kempniński and Marcin Ziótek*



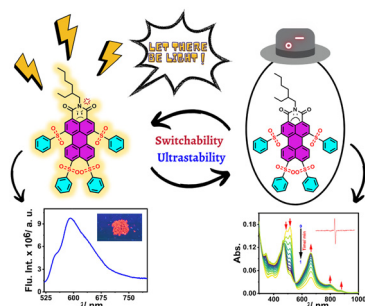
8368

Unravelling polymorphism-driven luminescence in GFP chromophore analogues: insights into the phase transition and morphology-dependent optical waveguide properties

Niteen B. Dabke, Yash Raut, Bhupendra P. Mali, Rinu Pandya, Kumar Vanka, Kochunnonny Manoj and Rajesh G. Gonnade*



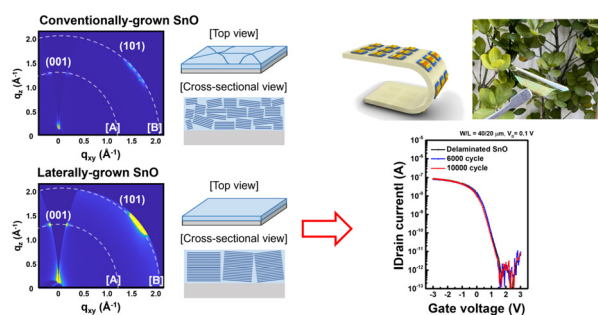
8380



Perylenemonoimide-based superstable radical anions and dianions with solid-state emission properties

Sukomal Bhunia, Anup Pramanik, Suman Bhattacharya* and Apurba Lal Koner*

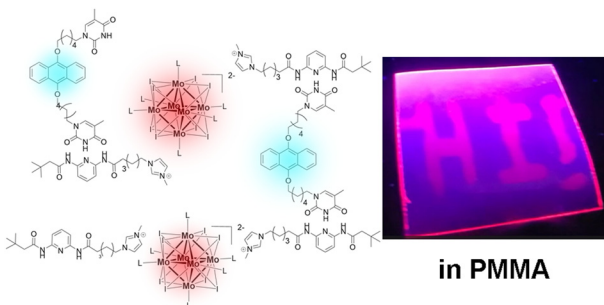
8390



Controlled 2D growth approach *via* atomic layer deposition for improved stability and performance in flexible SnO thin-film transistors

Hye-Mi Kim, Won-Bum Lee, Haklim Koo, Seo-Yeong Kim and Jin-Seong Park*

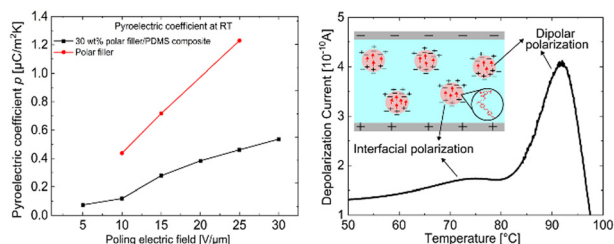
8398



Smart emissive hybrid dynamer and nanocomposite made of complementary organic and inorganic emitters combined *via* a supramolecular Janus synthon

Ilya V. Kashnik, Jeanne Rebours, Noée Dumait, Konstantin A. Brylev and Yann Molard*

8408



Pyroelectricity in poled all-organic polar polynorborene/polydimethylsiloxane-based stretchable electrets

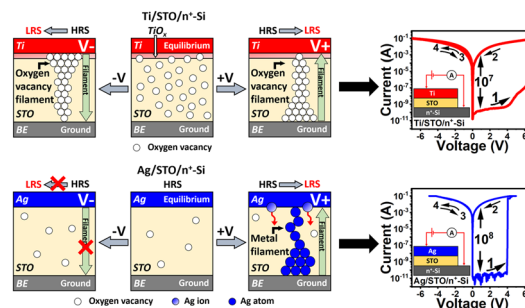
Thulasinath Raman Venkatesan,* Francis Owusu, Frank A. Nüesch, Manuel Schulze and Dorina M. Opris



8418

Demonstration of high-performance STO-based WORM devices controlled by oxygen-vacancies and metal filament growth

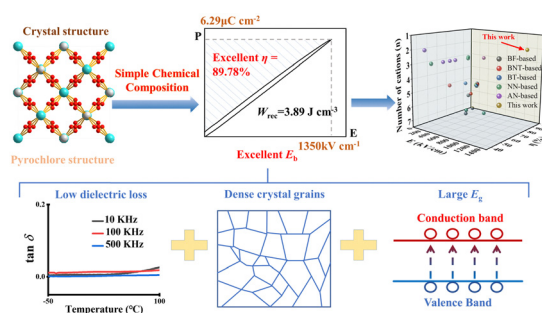
Chih-Chieh Hsu,* Xiu-Ming Wen, Kai-Zer Xiao, Wun-Ciang Jhang and Mojtaba Joodaki



8426

New pyrochlore $\text{La}_2\text{Zr}_2\text{O}_7$ ceramics with ultra-high breakdown electric field strength and energy storage efficiency

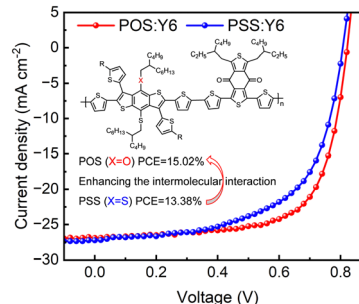
Teng Sui, Qin Feng,* Nengneng Luo, Jinhong He, Haoxiang Huang, Changlai Yuan,* Zhenyong Cen and Xiyong Chen



8435

Wide bandgap copolymers with asymmetric side chains for efficient organic solar cells

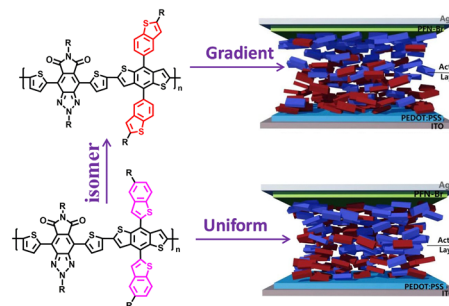
Zicheng Tao, Yi Li, Wenxiong Shen, Huiting Fu, Yunlong Ma and Qingdong Zheng*



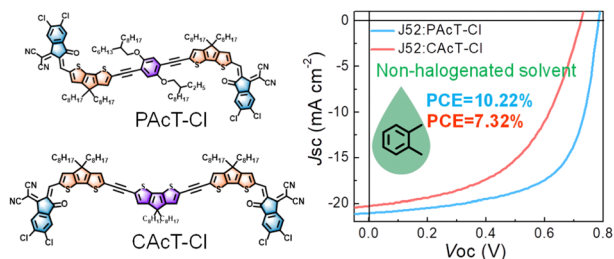
8442

The isomerization effect of a benzothiophene-substituted benzodithiophene-based donor polymer on the blend morphology and photovoltaic performance of all-polymer solar cells

Jinping Lin, Jiejie Wan, Haifen Liu, Zejiang Li, Shuqi Chang, Guangsheng Fu, Shaopeng Yang and Lixin Wang*



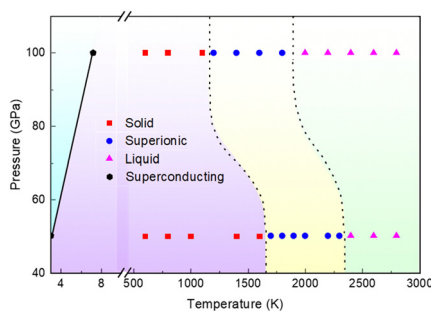
8452



Non-fused ring electron acceptors with an ethynylene linker for non-halogenated solvent-processed organic solar cells

Dou Luo, Aung Ko Ko Kyaw,* Tingting Dai, Erjun Zhou and Wai-Yeung Wong*

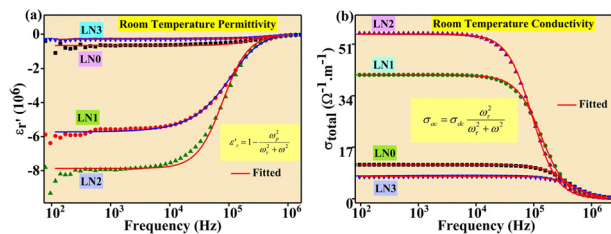
8461



Superconductivity and superionic behaviors of Kagome lattices in Li-Si compounds under high pressure

Xinwei Wang, Bohan Cao, Wenting Tang, Mengxin Yang, Jiabin Chen, Shi Chen, Mengrui Zhang, Fubo Tian* and Liang Li*

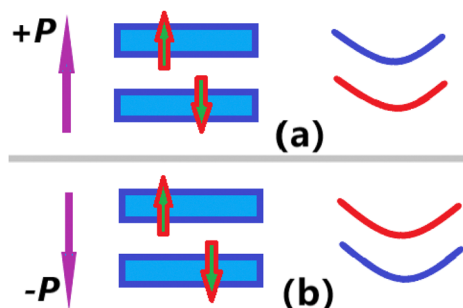
8473



Establishing the correlation of negative permittivity and AC conductivity of $\text{La}_{2-x}\text{Sr}_x\text{NiO}_4$ ($x = 0, 0.1, 0.3, 1.0$) for microwave shielding applications

Tarun Katheriya, Gurudeo Nirala and Shail Upadhyay*

8485



Spontaneous and reversible spin-splitting in ferroelectric A-type antiferromagnetism

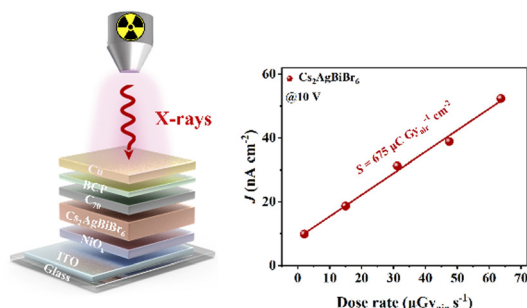
Liguo Zhang, San-Dong Guo* and Guangzhao Wang



8491

Printable thick junction-based lead-free perovskite single crystal powders for X-ray detection

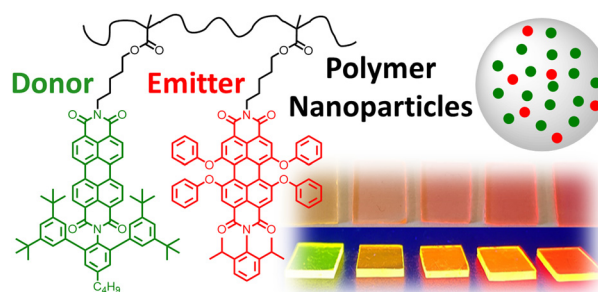
Wei Wu, Zhenglin Jia, Yong Liu, Jiali Peng* and Qianqian Lin*



8498

Fluorescent polymer nanoparticles containing perylene diimides for application in luminescent solar concentrators

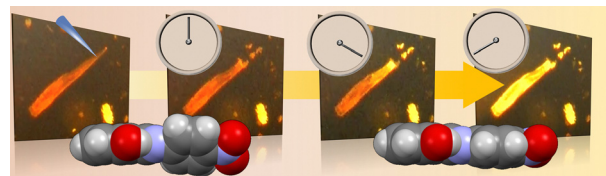
Rehana Pervin, Elham M. Gholizadeh, Kenneth P. Ghiggino and Wallace W. H. Wong*



8508

Mechanically-sensitive fluorochromism by molecular domino transformation in a Schiff base crystal

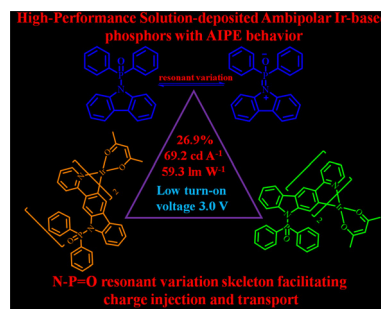
Toshiyuki Sasaki,* Takanori Nakane, Akihiro Kawamoto, Yakai Zhao, Yushi Fujimoto, Tomohiro Nishizawa, Nabadeep Kalita, Seiji Tsuzuki,* Fuyuki Ito,* Upadrasta Ramamurty,* Ranjit Thakuria* and Genji Kurisu*



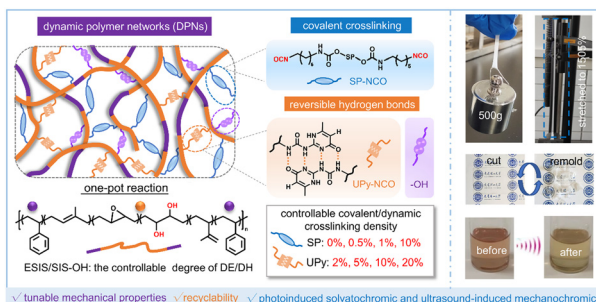
8514

High-performance solution-deposited ambipolar Ir(III) complex phosphors with aggregation-induced phosphorescence enhancement behavior based on an N–P=O resonant variation skeleton

Zhao Feng, Hongyan Wang, Siqi Liu, Shipan Xu, Ziyi Chen, Daokun Zhong, Xiaolong Yang, Yuanhui Sun and Guijiang Zhou*



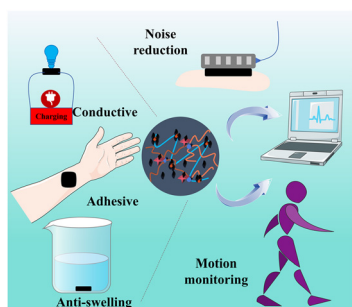
8525



Stimuli responsive dynamic polymer networks with tunable toughness and elasticity through the regulation of covalent crosslinking and reversible hydrogen bonds

Ruixue Zhang, Meng Lai, Hongyuan Bai, Hongwei Ma* and Li Han*

8534



An adhesive, low swelling and conductive tri-network hydrogel for wearable electronic devices

Mengyuan Hu, Longhai Qiu, Yuliang Huang, Donghui Wang,* Jiongliang Li, Chunyong Liang, Gen Wu* and Feng Peng*

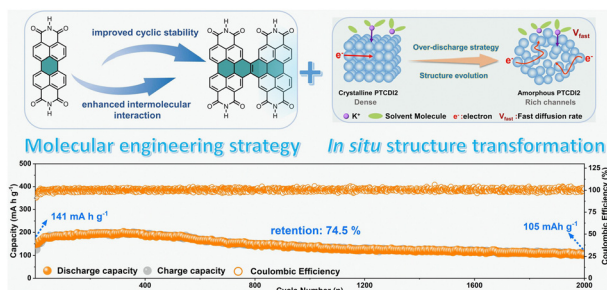
8545



Modulating the crystal packing to achieve efficient ultralong organic phosphorescence by simple methylation engineering

Huiting Mao, Jing Gao, Yun Geng, Guo-Gang Shan,* Kuizhan Shao, Ruinian Hua* and Zhongmin Su*

8551



Amorphization of fused perylene diimide dimers for high-efficiency potassium-organic batteries

Mengyuan Cheng, Hang Liu, Zhuocheng Tian, Xiaoqi Luo, Di Wu, Kui Yan* and Dongxue Wang*

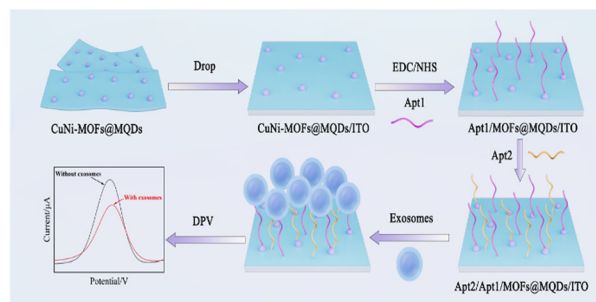


PAPERS

8561

MXene quantum dot functionalized bimetallic MOFs as a label-free aptasensor for highly sensitive detection of exosomes

Xue Su, Qiannan You,* Panyong Wang, Li Li, Mingfeng Ge, Li Yang,* Wen-Fei Dong and Zhimin Chang*



CORRECTION

8569

Correction: Electromagnetic interference shielding materials: recent progress, structure design, and future perspective

Xiao-Yun Wang, Si-Yuan Liao, Yan-Jun Wan,* Peng-Li Zhu,* You-Gen Hu, Tao Zhao, Rong Sun and Ching-Ping Wong

