

Journal of Materials Chemistry C

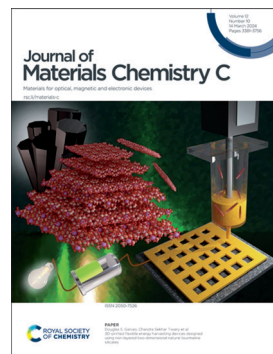
Materials for optical, magnetic and electronic devices

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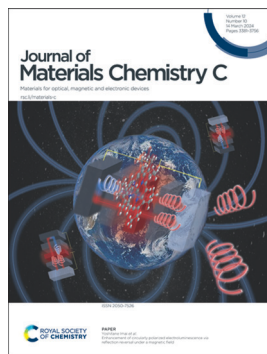
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See Douglas S. Galvao, Chandra Sekhar Tiwary *et al.*, pp. 3418–3429. Image reproduced by permission of the authors from *J. Mater. Chem. C*, 2024, 12, 3418.



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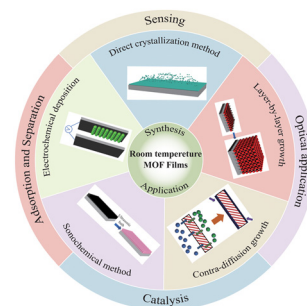
See Yoshitane Imai *et al.*, pp. 3430–3436. Image reproduced by permission of Yoshitane Imai from *J. Mater. Chem. C*, 2024, 12, 3430.

REVIEW

3394

Metal–organic framework thin films: review of their room-temperature synthesis and applications

Yifan Liu, Zhongxing Zhao, Min Li* and Zhenxia Zhao*

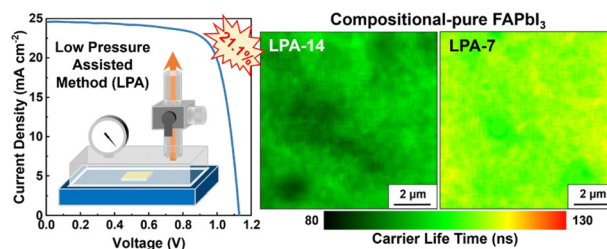


COMMUNICATION

3410

Efficient additive-free FAPbI₃ perovskite solar cells achieved by promoting homogeneity

Fanxiu Feng, Yan Guan, Fangzhou Liu, Cuncun Wu, Huhu Su, Biao Wang, Xian Zhang, Yuchao Liang, Shaogeng Cai, Yangyang Zhang,* Lixin Xiao* and Shijian Zheng*



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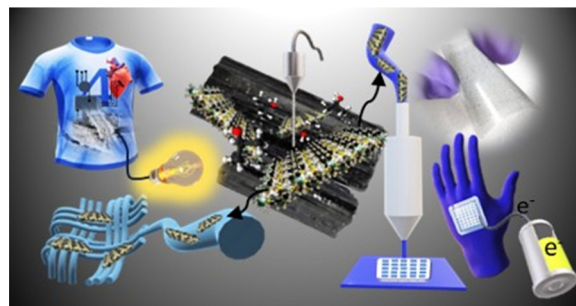
Fundamental questions
Elemental answers

PAPERS

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3D-printed flexible energy harvesting devices designed using non-layered two-dimensional natural tourmaline silicates

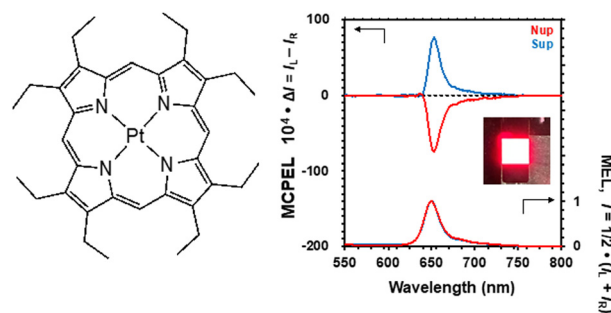
Preeti Lata Mahapatra, Raphael Tromer, Anjali Jayakumar, Gelu Costin, Basudev Lahiri, Rahul R. Nair, Debmalya Roy, Ajit K. Roy, Prafull Pandey, Douglas S. Galvao* and Chandra Sekhar Tiwary*



3430

Enhancement of circularly polarized electroluminescence via reflection reversal under a magnetic field

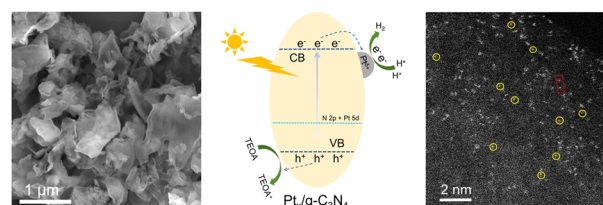
Seika Suzuki, Yuta Yamamoto, Maho Kitahara, Ryuta Shikura, Shigeyuki Yagi and Yoshitane Imai*



3437

Accelerating photocatalytic hydrogen production by anchoring Pt single atoms on few-layer g-C₃N₄ nanosheets with Pt–N coordination

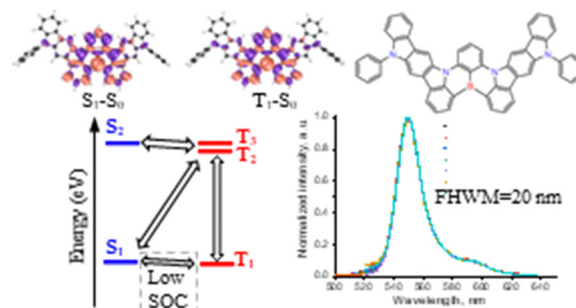
Qi Zhang, Miao Yue, Peng Chen, Qingmiao Ren, Weihua Kong, Chenxia Jia, Qianyu Lu, Jizhou Wu, Yuqing Li, Wenliang Liu, Peng Li, Yongming Fu* and Jie Ma*



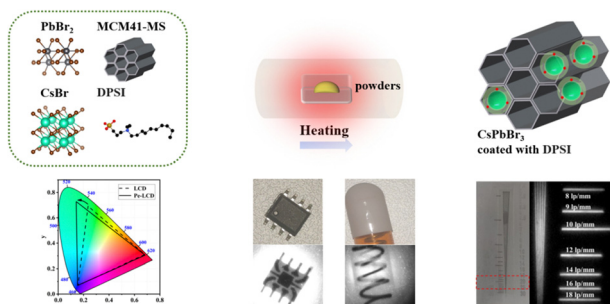
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Is a small singlet–triplet energy gap a guarantee of TADF performance in MR-TADF compounds? Impact of the triplet manifold energy splitting

Rasa Keruckiene, Aliaksei A. Vaitusionak, Maksim I. Hulnik, Ivan A. Berezianko, Dalius Gudeika, Simas Macionis, Malek Mahmoudi, Dmytro Volyniuk, Danillo Valverde, Yoann Olivier,* Kai Lin Woon, Sergei V. Kostjuk, Sebastian Reineke, Juozas V. Grazulevicius* and Gjergji Sini*



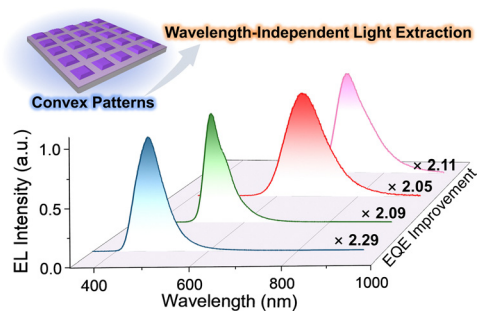
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Highly efficient and ultra-stable CsPbBr₃ composites for LCD devices and X-ray imaging

Peng Wang, Zhaoyu Wang, Meiyi Zhu, QiuTing Cai, Hanyan Huang, Chengyuan Tang, Haoran Zhang, Chao Fan,* Xingliang Dai, Haiping He* and Zhizhen Ye*

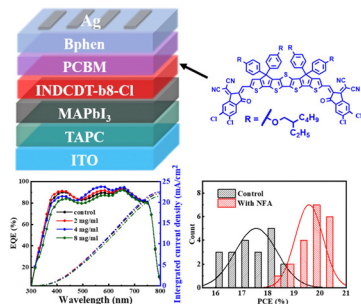
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Lithographic convex pattern as a wavelength-independent light extraction structure for efficient organic light-emitting diodes

Zhi-Hao Qu, Ye Wang, Min Song, Wei-Zhi Liu, Jie Yan, Shu-Guang Meng, Meng-Tian Li, Sheng-Nan Li, Dong-Ying Zhou,* Yun Chi* and Liang-Sheng Liao*

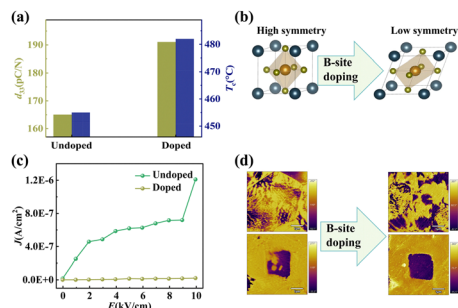
3482



A non-fullerene acceptor as an interfacial modified layer for enhancing efficiency and stability of inverted perovskite solar cells

Genjie Yang, Shakil N. Afraj, Jiawen Li, Dayong Zhang, Pu Fan, Ming-Chou Chen,* Ding Zheng* and Junsheng Yu*

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Simultaneous enhancement of piezoelectric properties and Curie temperature in BiFeO₃–BaTiO₃ lead-free ferroelectrics via simple B-site modification

Jinyu Chen, Chao Chen,* Fulan Jiang, Chong Zhao, Na Tu, Yunjing Chen, Xin Nie, Xiaokun Huang and Xiangping Jiang*

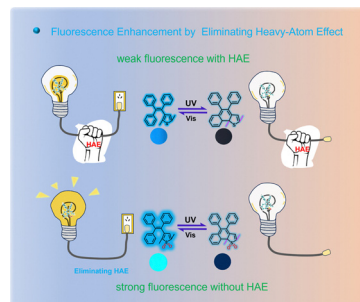


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Fluorescent photoswitches with improved emission efficiency based on aggregation-induced emission luminogens by eliminating the heavy-atom effect

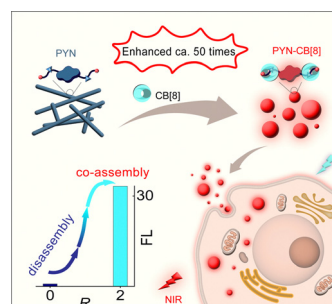
Jiale Zhan, Chuangye Yao, Zhengdong Han, Yuzhen Wu, Hui Feng* and Zhaosheng Qian*



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Near-infrared fluorescence probes based on disassembly-induced emission pyrene derivatives

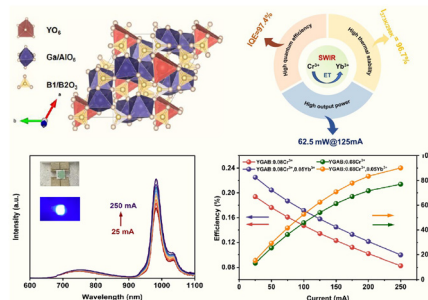
Yuteng Zhang, Xiongfei He, Yang Li, Jingyao Mao, Jian Fan* and Bo Song*



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Enhanced quantum efficiency and thermal stability by crystal-field engineering in a $Y(\text{Ga,Al})_3(\text{BO}_3)_4:\text{Cr}^{3+}, \text{Yb}^{3+}$ phosphor for diverse short-wave infrared applications

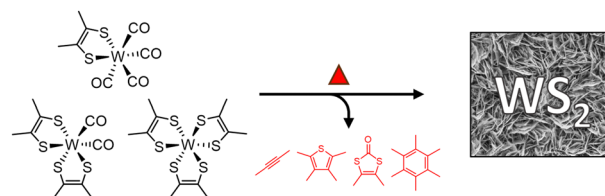
Chenxue Wang, Xibao Zhang, Chuansheng Zhong, Xiudi Wu, Yonghui Xu, Shuwen Yin, Qingtao Yang, Liang Zhou* and Hongpeng You*



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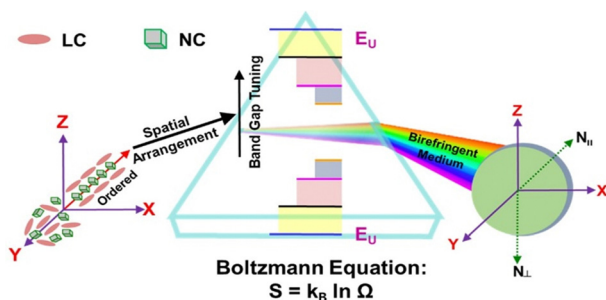
Aerosol-assisted chemical vapor deposition of 2H-WS₂ from single-source tungsten dithiolene precursors

Ian M. Germaine, Nathaniel E. Richey, Mary B. Huttel and Lisa McElwee-White*



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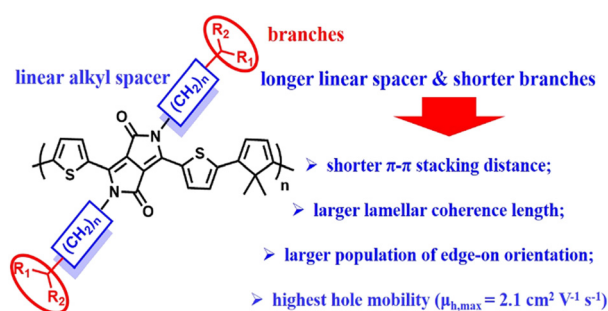
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Fermi–Dirac statistics in correlation between electronic entropy and spatial confinement of liquid crystal-perovskite nanohybrids

Deejan Debnath, Prithish Halder, Barnali Saha, Himadri Acharya and Sujit Kumar Ghosh*

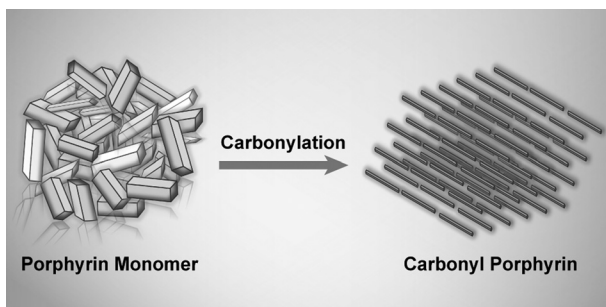
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Regulation of microstructure and charge transport properties of cyclopentadiene-based conjugated polymers via side-chain engineering

Jianeng Ma, Qiao He, Zhongyuan Xue, Hou Lon Sou, Yang Han, Hongliang Zhong, Agostino Pietrangelo, Martin Heeney* and Zhuping Fei*

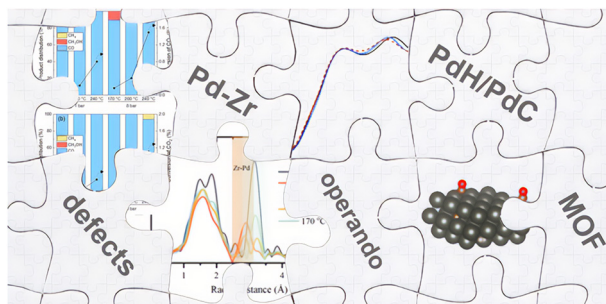
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Carbonyl functionalization strategy to overcome easy agglomeration in porphyrin

Mingli Li and Taotao Qiang*

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The structure of Pd-functionalized UiO-67 during CO₂ hydrogenation

Alina A. Skorynina,* Andrea Lazzarini, Dag Kristian Sannes, Elizaveta G. Kozyr, Christian Ahoba-Sam, Silvia Bordiga, Unni Olsbye* and Aram L. Bugaev*

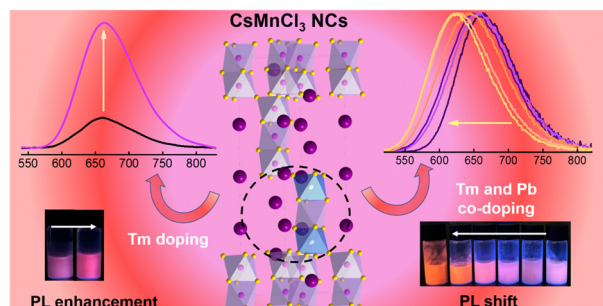


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Metal co-doped cesium manganese chloride nanocrystals with high efficiency and tunable red emission

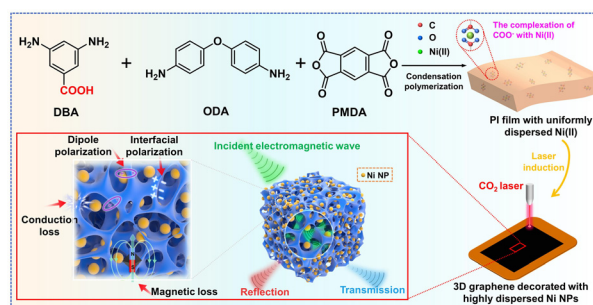
Shijia Liu, Xuebin Zhang, Qin Xu,* Zhiheng Xu, Haibo Zeng* and Dandan Yang*



3579

3D graphene decorated with nickel nanoparticles: *in situ* synthesis, enhanced dispersibility, and absorption-dominated electromagnetic interference shielding

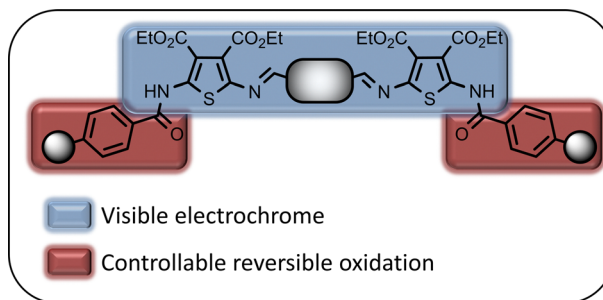
Liqing Chen, Nian Li,* Xinling Yu, Cui Liu, Yanping Song, Zhao Li, Jun Kang, Wenbo Wang, Na Hong, Hu Ge, Pengzhan Yang, Shudong Zhang* and Zhenyang Wang*



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Effect of azomethine structural modification of electrochromic performance

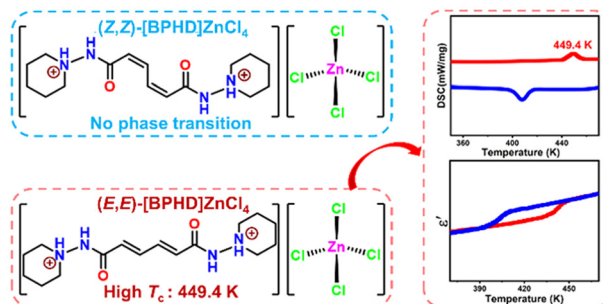
Yohan Gautier and W. G. Skene*



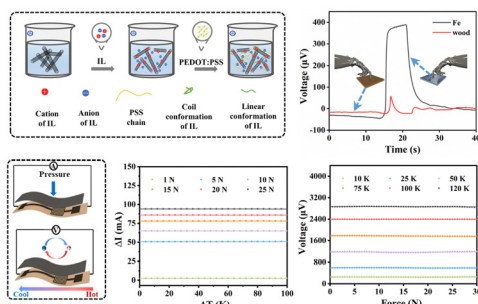
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A muconic acid derivative isomeric organic–inorganic metal halide with high-temperature phase transition

Yan-Zi Lu, Jun-Chao Qi, Hang Peng, Zhang-Tian Xia, Xin Shen and Wei-Qiang Liao*



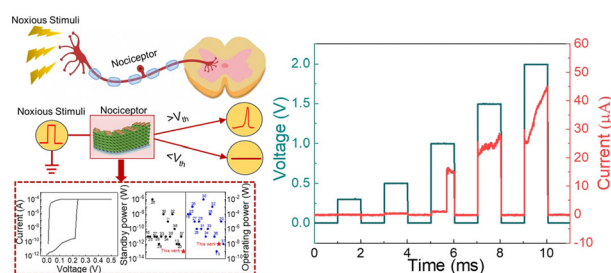
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A selectively bimodal flexible sensor based on IL/SWCNTs/PEDOT:PSS nanocomposites for materials and shape recognition

Shen Yuan, Yuchen Tian, Yue Li, Shengzhao Li, Lei Fu, Tie Li* and Ting Zhang*

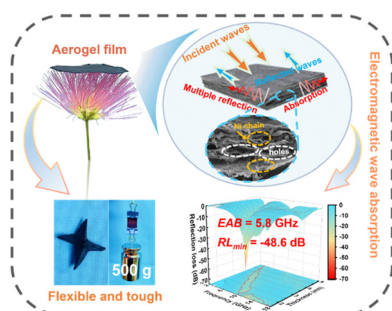
3622



A low power flexible halide perovskite-based threshold switching memristor as an artificial nociceptor

Lingzhi Tang, Jiaan Wang, Yang Huang, Hengshan Wang, Chen Wang* and Yiming Yang*

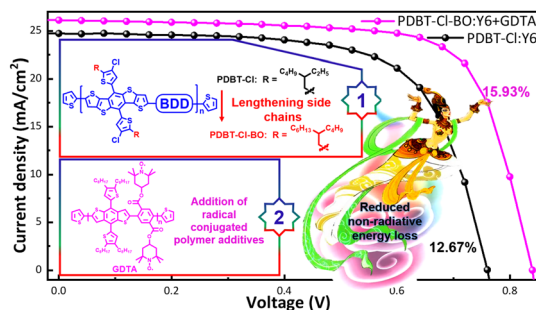
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Robust and flexible composite aerogel films with porous multilayered structures toward broadband electromagnetic wave absorption

Zhihui Li, Chenhui Xu, Jiajia Zheng, Tianyi Hang, Yiming Chen,* Hongjun Lin, Xiping Li and Zhiyi Wu*

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Synergistically boosting performances of organic solar cells from dithieno[3,2-b]benzo[1,2-b;4,5-b']dithiophene-based copolymers via side chain engineering and radical polymer additives

Husen Xu, Pengzhi Guo, Qian Wang,* Xin He, Anqi Zhou, Xiaowei Sun, Ergang Wang, Han Young Woo, Hongbin Wu and Yangjun Xia*

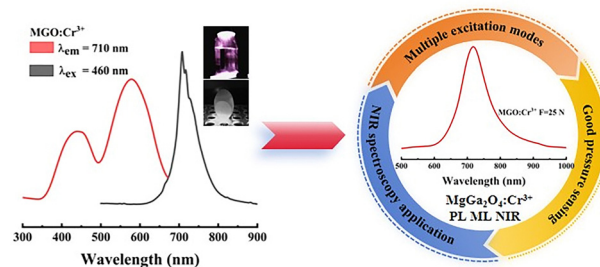


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Simultaneous NIR photoluminescence and mechanoluminescence from Cr³⁺ activated MgGa₂O₄ phosphors with multifunctions for optical sensing

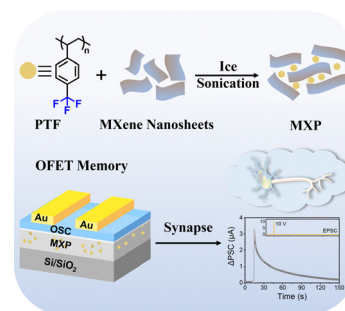
Yaowu Wang, Guocheng Pan, Jianfeng Wang,* Yinyan Li, Zhenping Wu, Shiqing Xu and Gongxun Bai*



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MXene hybrid nanocomposites enable high performance memory devices and artificial synapse applications

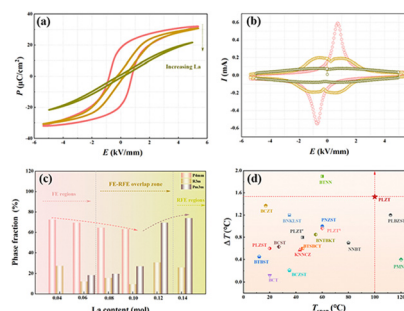
Cui Wang, Nuoya Li, Hang Zeng, Li Chen,* Di Wu and Jianlong Xia*



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Synergistically optimizing electrocaloric effect over a wider temperature span utilizing structural overlap zone

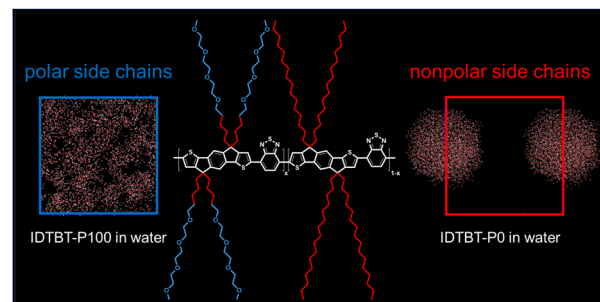
Meng Xie, Yizheng Bao, Fan Yang, Hengchang Nie,* Ruowei Yin, Junjie Li, Yang Bai and Genshui Wang*



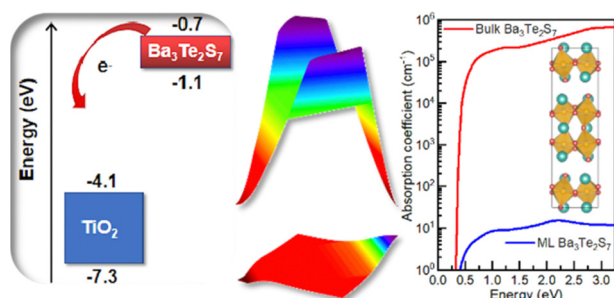
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Side chain engineering in indacenodithiophene-co-benzothiadiazole and its impact on mixed ionic–electronic transport properties

Isabelle Holzer, Vincent Lemaur, Meng Wang, Han-Yan Wu, Lu Zhang, Raymundo Marcial-Hernandez, Peter Gilhooly-Finn, Priscila Cavassin, Sébastien Hoyas, Dilara Meli, Ruiheng Wu, Bryan D. Paulsen, Joseph Strzalka, Andrea Liscio, Jonathan Rivnay, Henning Sirringhaus, Natalie Banerji,* David Beljonne,* Simone Fabiano* and Christian B. Nielsen*



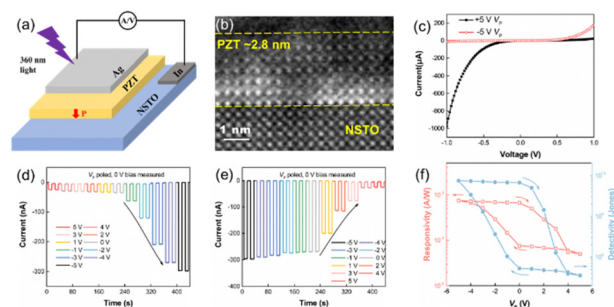
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Flexible chalcogenide perovskite $\text{Ba}_3\text{Te}_2\text{S}_7$ with high electron mobility and strong optical absorption ability

Juan Du, Jun-jie Shi,* Jin-xiang Deng and Cong-xin Xia*

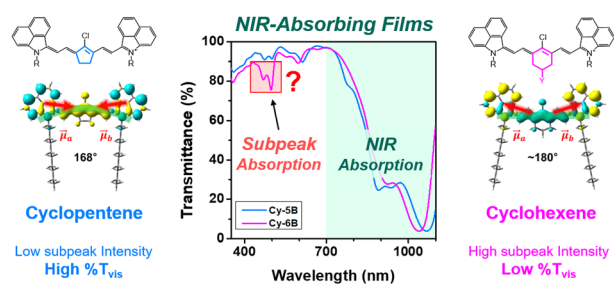
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Ferroelectrically modulated and enhanced photoresponse of a Ag/PZT/NSTO self-powered photodetector in the ultraviolet range

Zhuokun Han, Bingcheng Luo, Shuanhu Wang, Wei Zhai and Jianyuan Wang*

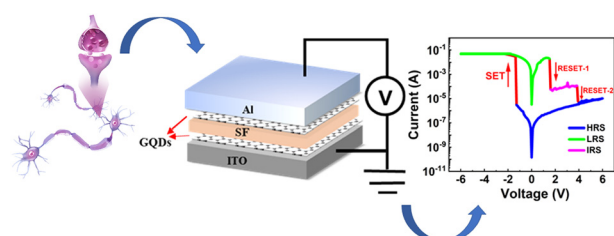
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Development of benzo[cd]indolenyl cyanine dyes for NIR-absorbing films and elucidation of molecular structure–spectroscopic relationship

Hyun Kyu Lee, Dong Jun Lee, Hong Mo Kim, Tae Gyu Hwang, Yoo Sang Kim, Suhyeon Kim, Woo Jin Choi, Wansoo Kim, Jun Ho Yoon, Min Sung Kim, Seong Hyun Jang, Jun Choi* and Jae Pil Kim*

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Silk fibroin/graphene quantum dots composite memristor with multi-level resistive switching for synaptic emulators

Suna Fan, Shubin Liu, Yulong Xie, Xinglu Zhou and Yaopeng Zhang*



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Green hydrothermally synthesized ultrathin Mg-doped CuO nanoflakes: a structural, electrical and dielectric study

H. A. A. Saadallah,* M. A. A. Mohamed, Y. P. Hardianto, A. M. Abdel Hakeem, S. A. Saleh, R. Kyrychenko, D. Wolf, S. Schiemenz, A. Popov, S. Hampel and E. M. M. Ibrahim

