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Journal of Materials Chemistry C

Materials for optical, magnetic and electronic devices

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IN THIS ISSUE

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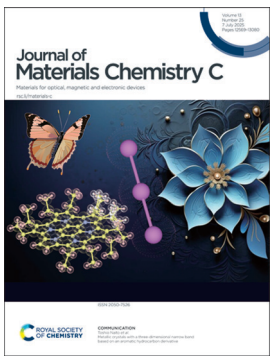

Cover
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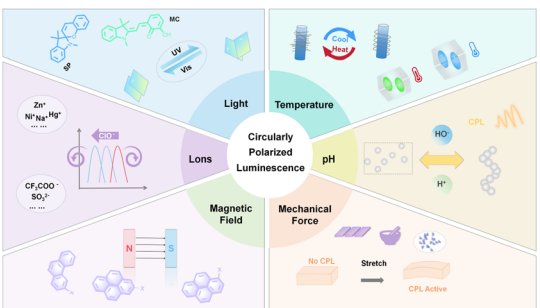
REVIEWS

12584

Recent advances in organic stimuli-responsive tunable circularly polarized luminescence materials

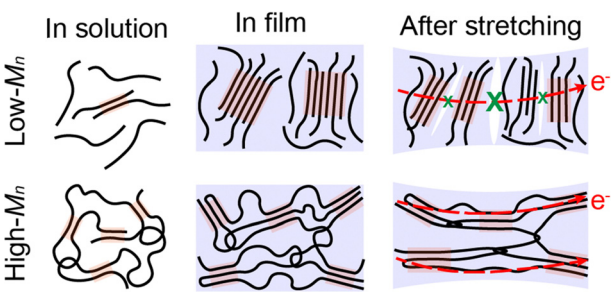
Mengran Liu, Chenfei Yang, Shuyu Li,* Xiaotao Zhang* and Wenping Hu



12612

Molecular weight optimization for intrinsically stretchable conjugated polymers: from film microstructure to strain-insensitive performance

Zicheng Ding,* Jiayi Hua, Zhaomin Gao, Minghui Wang, Kui Zhao and Yanchun Han*



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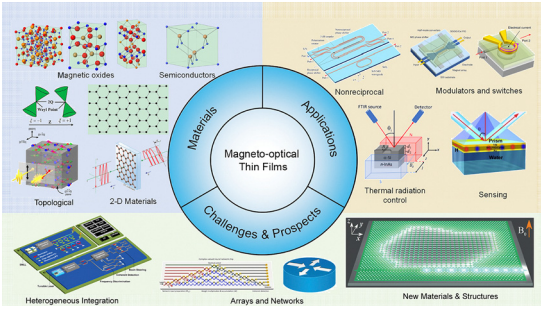
REVIEWS

12628

Recent development of magneto-optical thin films and integrated photonic devices

Zixuan Wei, Yucong Yang, Di Wu, Junxian Wang, Xiaoshao Ma, Xuan Zhao, Tianchi Zhang, Jialong Wang, Jun Qin and Lei Bi*

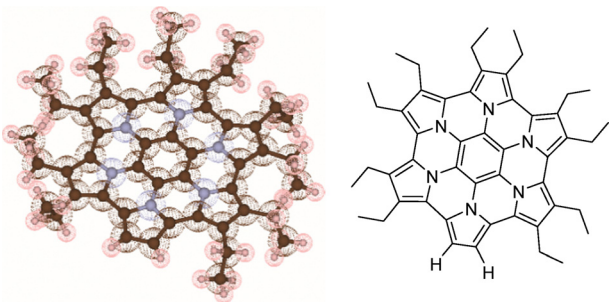


COMMUNICATIONS

12650

Metallic crystals with a three-dimensional narrow band based on an aromatic hydrocarbon derivative

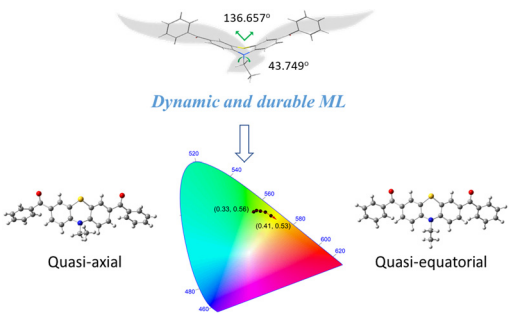
Misako Ikeda, Yoshiki Sasaki, Yoshino Fujikawa, Shigeki Mori, Kensuke Konishi, Keishi Ohara, Haruhiko Dekura, Hiromichi Toyota, Masayoshi Takase, Ami Mi Shirai, Yuta Murotani, Ryusuke Matsunaga and Toshio Naito*



12657

Mechanical stimulus-responsive luminescence: dynamic and durable mechanoluminescence based on PTZ derivatives

Yun Yu,* Jiaming Xie, Peihao Li, Biao Xiao, Can Wang and Renqiang Yang*

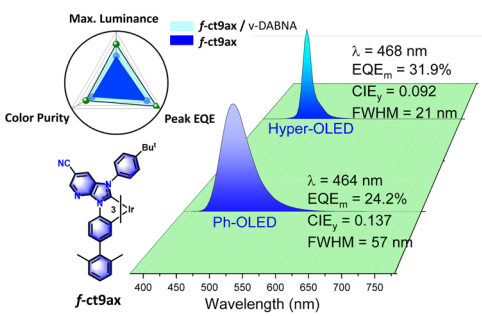


PAPERS

12663

Blue-emitting iridium(III) phosphors with functional imidazo[4,5-*b*]pyridin-2-ylidene cyclometalates: designs aimed at greater steric hindrance

Chengcheng Wu, Yixin Wu, Kai-Ning Tong, Martin Kuhn, Shek-Man Yiu, Yu-Cheng Kung, Wen-Yi Hung, Jie Yan,* Xiuwen Zhou,* Guodan Wei* and Yun Chi*



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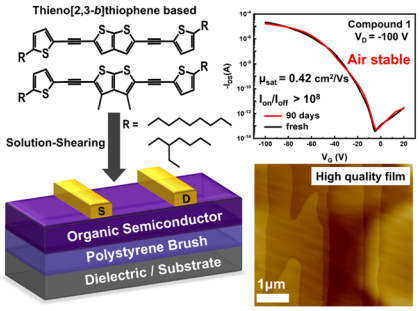
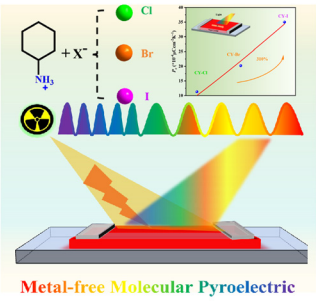
12675



Performance enhancement of air-stable thieno[2,3-*b*]-thiophene organic field-effect transistors *via* alkyl chain engineering

Seongjin Oh, Hyowon Kang, Choongik Kim* and SungYong Seo*

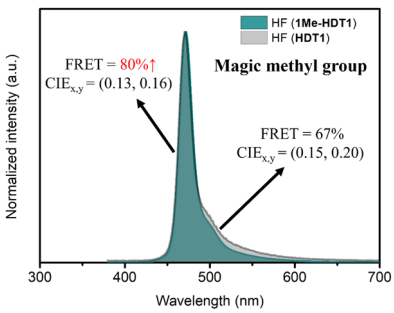
12685



A metal-free molecular pyroelectric material with strong pyro-photovoltaic coupling for enhancing self-powered X-ray response

Huaimin Ni, Haojie Xu, Aijun Liu, Wuqian Guo, Qingshun Fan, Yi Liu,* Zihao Zhao, Xianmei Zhao, Junhua Luo and Zhihua Sun*

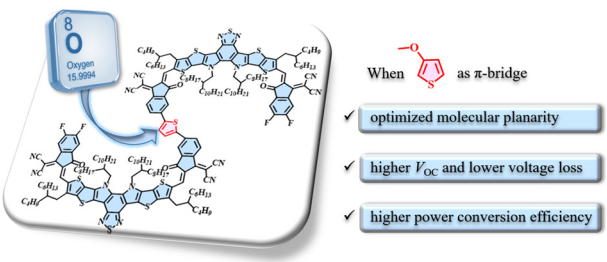
12691



The magic methyl effect of thermally activated delayed fluorescent emitters on blue organic light-emitting diodes

Yufang Li, Rangani Wathsala Weerasinghe, Yanmei Hu, Xiaolan Tan, Baoshuo Cai, Chihaya Adachi and Chin-Yiu Chan*

12699



Effects of the number of methoxy groups in the thiophene π-bridges on the photovoltaic performance of the A–π–A type quasi-macromolecular acceptors

Qinhao Shi, Yijie Nai, Siqing He, Yitong Ji, Weikun Chen, Wei Liu, Wenchao Huang, Jun Yuan* and Yingping Zou*

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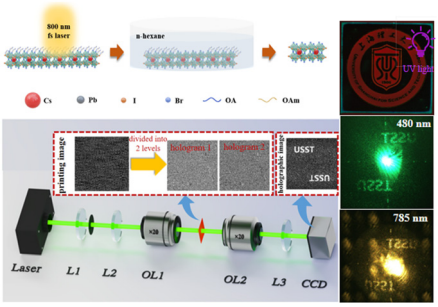
12707

Femtosecond laser direct writing of $CsPb(I/Br)_3$ quantum dot films for displays and holography

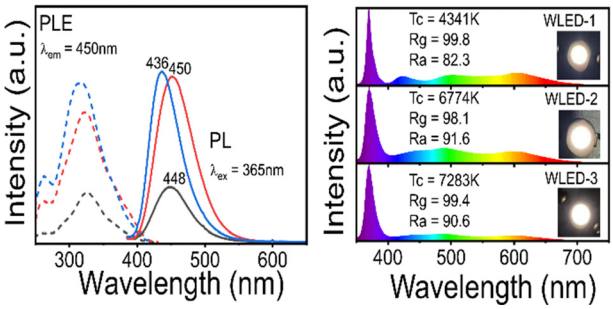
Yi Wei, Ying Lv, Shengting Zhu and Yinan Zhang*



12714

Violet light excitable $K_xNa_{5-x}B_2P_3O_{13}$:Eu (x = 0, 1, 2) borophosphates as novel phosphors for multifunctional applications

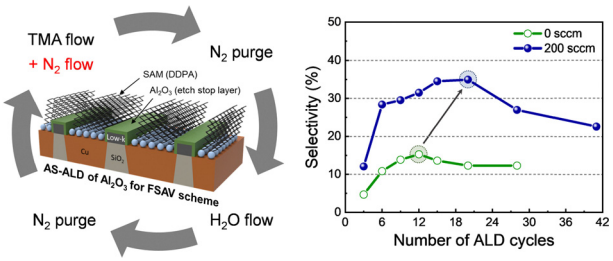
Yaping You, Ya Zheng, Zesheng Pan, Yunluo Wang, Tianrui Zhou, Minghui Wang, Haijie Chen,* Wan Jiang* and Lianjun Wang*



12725

Enhancing selectivity in area-selective atomic layer deposition of Al_2O_3 on Cu using N_2 co-flow

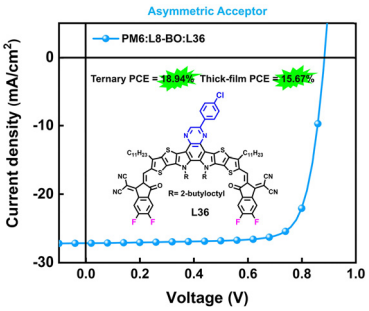
Sangjun Lee, Changyu Park, Yong-Woo Choi, Seong Woo Jeong, Sung-Wook Hong, Yunhee Cho, Hana Lee, Hyeji Kim, Andreas Klipp, Pil J. Yoo and Hyoungsub Kim*



12733

Asymmetric acceptors with fluorinated and chlorinated end-groups enable organic solar cells with almost 19% efficiency and high thickness tolerance

Dandan Li, Wenrong Zhao, Gang Li,* Yan Xu, Lin Da, Ping Zhou, Peng Yang* and Bo Tang*



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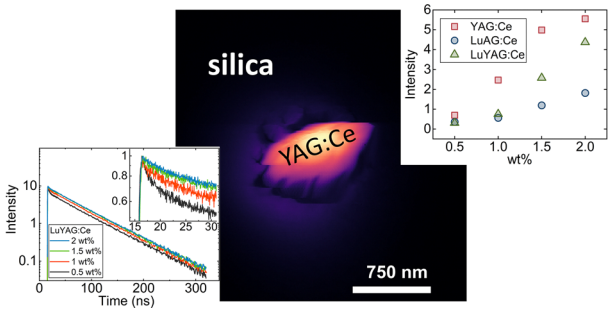
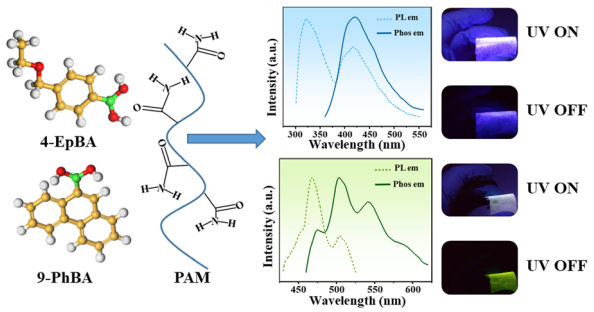


Novel scintillators based on cerium-doped garnets in amorphous silica: crystal quality at the cost of glass

Saulius Nargelas,* Monika Skruodienė, Arnoldas Solovjovas, Šarūnas Ščefanavičius, Gabija Soltanaitė, Mantas Migauskas, Žydrūnas Podlipskas, Aivaras Kareiva and Gintautas Tamulaitis

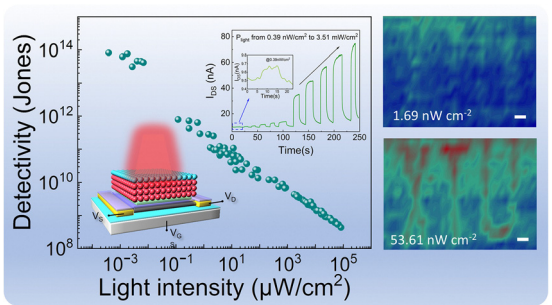
12754



***In situ* synthesis of multicolor phosphorescent films of polyacrylamide by regulating the conjugation of guest molecules**

Qing Yao, Zeyu Wang,* Ahmed Allam, Zheyuan Da, Chen Zhang, Junnan Wang and Minqiang Wang*

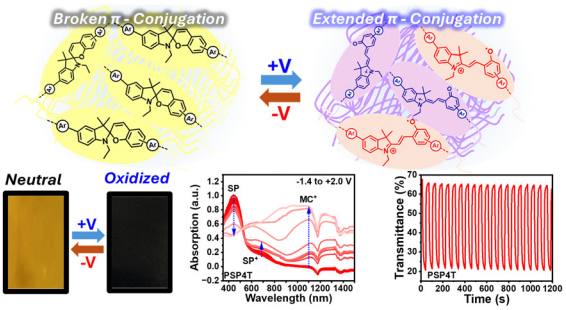
12762



Heterojunction floating-gate phototransistors for ultraweak short-wavelength infrared photodetection

Xuemin Gong, Kai Huang,* Xiaofei Xiao, Xiaolu Wang, Xuanyue Huang, Xiongqing Wu, Yangyu Li, Yiwei Liu* and Juexian Cao*

12772



Harnessing the reversible isomerization of spiropyran to merocyanine in conjugated polymers for broadband ultra-violet to near-infrared electrochromic switching

Raul S. Ramos, Fernando Muñoz-Alba, Kavish Saini, Karyme M. Castaneda, Vianey F. Juarez-Rangel, Sreeprasad T. Sreenivasan, M. Carmen Ruiz Delgado, Rocío Ponce Ortiz and Robert M. Pankow*

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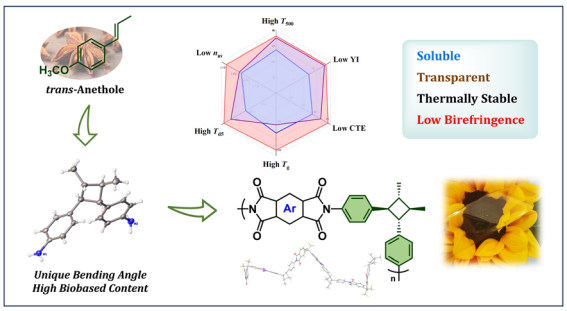
PAPERS

12783

Soluble, colorless and biobased polyimides with high thermal stability derived from renewable anethole

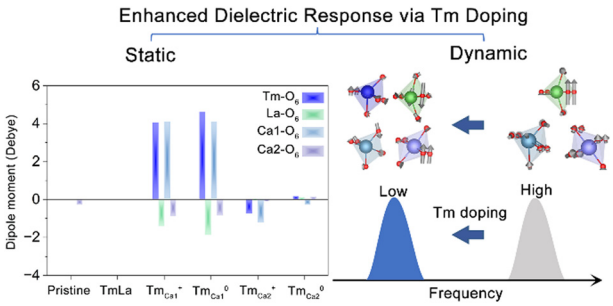
Fangyu Li, Yongzhen Wang, Jiawen Li, Haijiao Xie and Jiajia Wang*



12793

Theoretical design of dielectric enhancement in Tm-doped LaCOB crystals

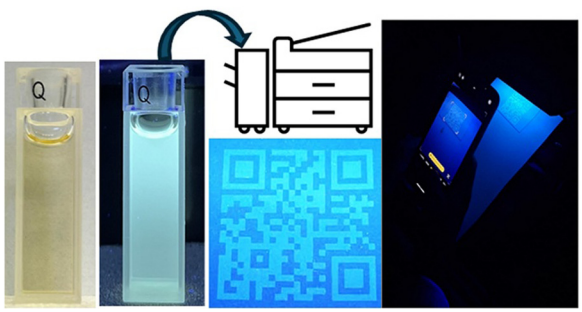
Linyu Bai, Zijian Liu, Qingshan Bao, Honghe Zhao, Xian Zhao, Fapeng Yu* and Yanlu Li*



12801

Electrochemical synthesis of nitrogen-doped carbon dot inks and evaluation of their use for anticounterfeiting applications

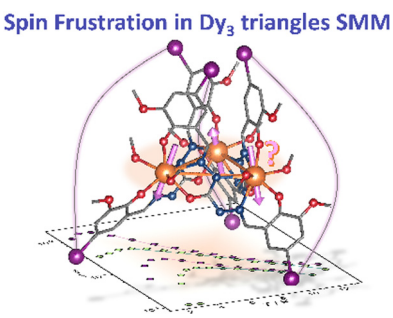
Martina Piletti, Themis Krasoudaki, Andrea Matulac, Labrini Sygellou, Dario Angelone, Sanathana Konugolu Venkata Sekar, Rodorico Giorgi, Aidan J. Quinn and Daniela Iacopino*



12812

Exploring the balance between spin frustration and single-ion effects in triangular Dy_3 complexes

Chieh-Wei Chang, Jérôme Rouquette, Po-Heng Lin* and Jérôme Long*



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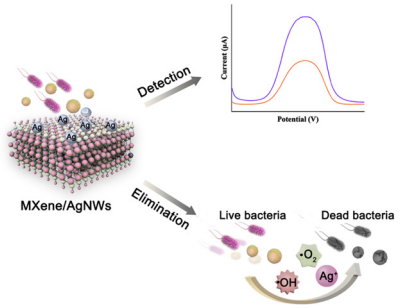
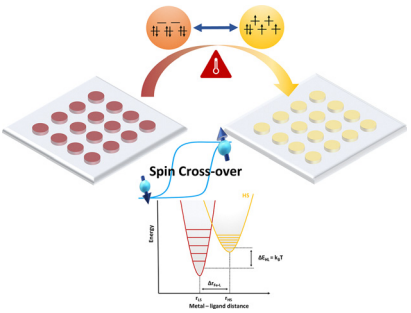


Flexible and conductive MXene/silver nanowire films for enhanced detection and elimination of bacteria

Zixuan Jia, Huimin Miao, Mingna Hu, Jie Wu, Jiahui Cai, Xinlu Li, Zhimin Chang, Panyong Wang,* Li Li, Wen-Fei Dong* and Qiannan You*

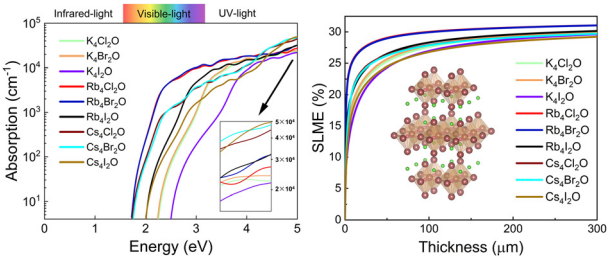
12830



Spin crossover-driven thermochromic temperature sensor for monitoring heat transfer *via* image analysis

Bhart Kumar, Kamalesh Tripathy, Mitradip Bhattacharjee and Sanjit Konar*

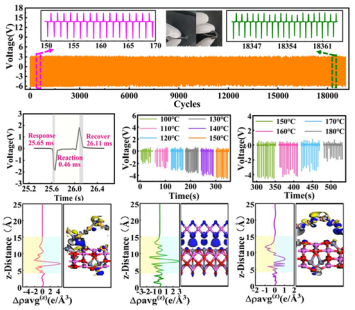
12837



Exploring novel anti-perovskites X_4A_2O (X = K, Rb, Cs; A = Cl, Br, I) with excellent photoelectric performance towards photovoltaic applications

Yuqi Zhang, Kai Li, Min Zhang* and Lei Li*

12846



Hybrid piezoelectricity enabled flexible AZO/SiC thin films sensor with a high output voltage and broad temperature range

Xing Jia, Zhaohui Weng, Qiaobang Xiang, Wei Xue and Ningbo Liao*

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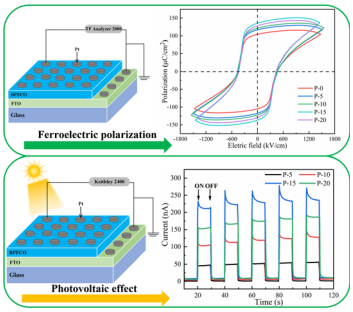
12855

Phase transition-driven modulation of ferroelectricity and the photovoltaic effect in sol–gel-derived $BiFeO_3$-based films

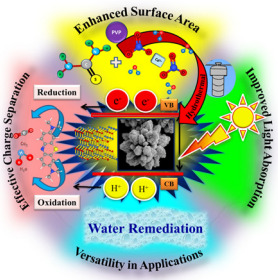
Guang-Cheng Zhang, Jian-Qing Dai,* Jin Yuan, Xin-Jian Zhu, Hao-Nan Liu and Cai-Dong Gu



12870

Unraveling the chemistry of PVP in engineering CdS nanoflowers for sunlight-driven photocatalysis

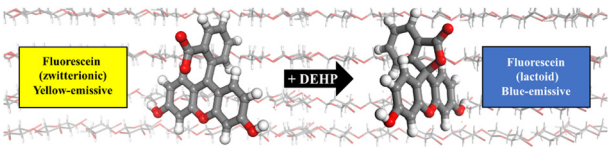
Rupam Sharma, Mathivathani J. R., Sahil Thakur, Sathiyan Govindasamy, Raj Bahadur Singh, Hendrik Christoffel Swart and Jai Prakash*



12890

Old dog, new trick: discovery of the solid-state phthalate detection capabilities of fluorescein

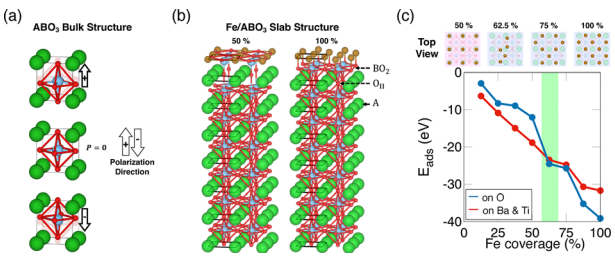
Pablo Labra-Vázquez,* Marie Gressier, Guillaume Rioland and Marie-Joëlle Menu*



12903

Interfacial magnetic anisotropy of iron-adsorbed ferroelectric perovskites: first-principles and machine learning study

Dameul Jeong, Seoung-Hun Kang* and Young-Kyun Kwon*



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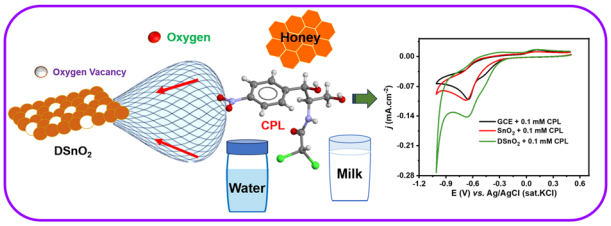
PAPERS

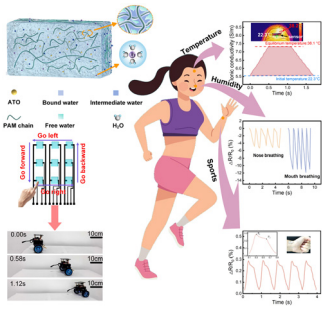
12911



An oxygen-deficient tin oxide-modified electrode for nanomolar detection of chloramphenicol

Sampathkumar Prakasam, Giribabu Krishnan and Suresh Chinnathambi*

12922



Design of moisturizing and frost-resistant ionic hydrogels for multimodal sensing through water-stabilizing effects

Sijia Chang, Jiaying Mo, Beizhe Chang, Yiduo Huang, Lei Li, Zihong Zhao, Jiaheng Bi, Xiaozheng Ji, Ruirui Li,* Zuankai Wang* and Jijun Xiong

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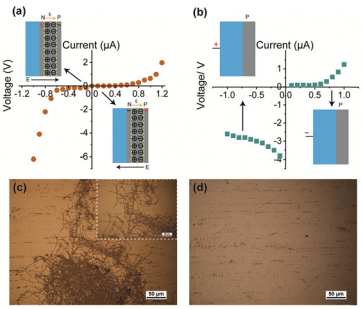
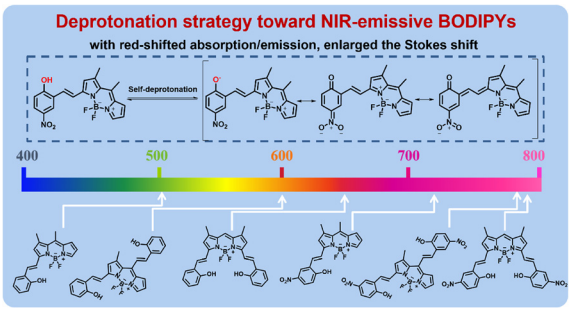


Elimination of space charge effects in passivation films: the key to substantially enhancing the dielectric properties of tantalum oxide films

Jiping Zhao,* Jingjing Liu, Xiaoxuan Zhu, Beibei Wang, Hongbing Cai and Jingsong Xu*

12944



Phenolic deprotonation triggered NIR emission and large Stokes shifts of BODIPY dyes

Ying Zou, Zhengrong Li, Huan Ma, Xinying Xu, Chunlai Yang, Yifu Huang and Hefeng Zhang*

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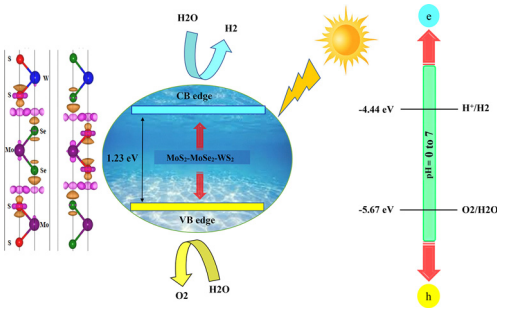
12956

Interlayer coupling in tri-layered van der Waals heterostructures of MX_2 (M = Mo, W; X = S, Se, Te) monolayers: optical and photocatalytic response

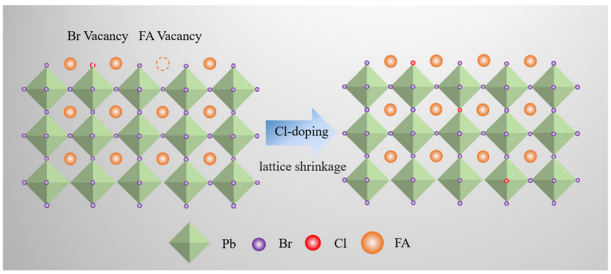
Muhammad Idrees, Basit Ali, Qaisar Alam, Yuxiang Bu* and B. Amin*



12967

Cl-doped $FAPbBr_3$ single crystals with stabilized lattice and suppressed surface vacancies for environmentally stable photodetectors

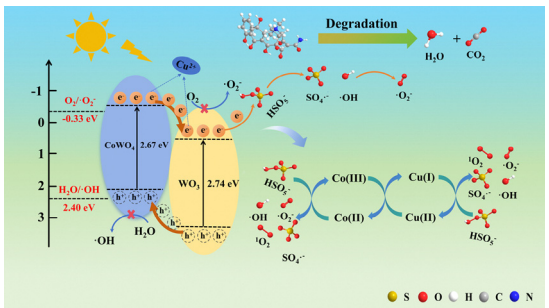
Changlai Yan, Shaoqing Chen, Xia Li* and Jianhui Huang*



12976

Cu-doped $CoWO_4/WO_3$ heterojunctions as peroxymonosulfate activators for rapid degradation of organic pollutants

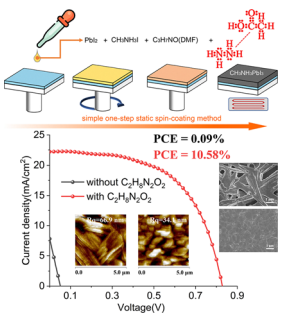
Huiqing Feng, Binsong Wang,* Tianqi Wang, Bingyu Zhang and Jiuhong Wang



12986

Hydrazine acetate promoted the formation of equiaxed perovskite grains for efficient solar cells

Yanan Sun, Yuan Li, Wei Chen and Zhengyi Sun*



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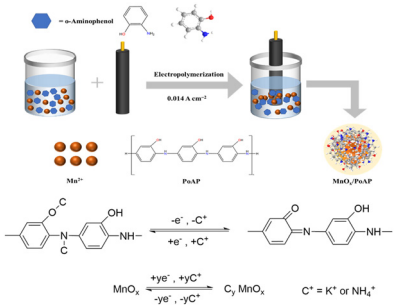
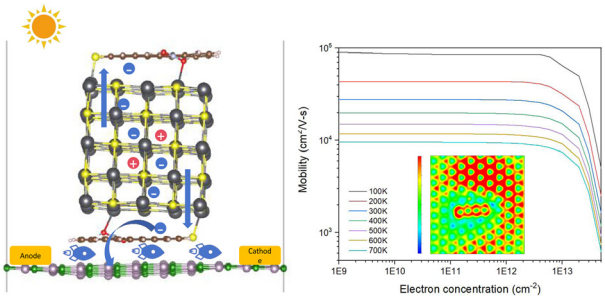
12994



Simultaneous electrodeposition of manganese oxide/poly(*o*-aminophenol) composites as electrode materials for aqueous electrochemical energy storage

Shaotong Pei,* Bo Lan, Xueting Bai, Yunpeng Liu, Xinlan Yi, Haichao Sun, Weiqi Wang, Mianxiao Wu and Chao Wang*

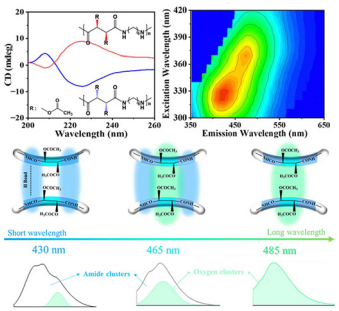
13007



A first-principles study of polycyclic aromatic hydrocarbon-mediated PbS QD/2D BP 0D/2D hybrid-dimensional systems

YuXuan Du, ZhuoMan Wang, Shuai Wen, MengLin Li, LiZhu Wu, Tao Ma, Meiqi Wang, Shaojie Peng, Shengyong Wang, Chao Wu and Huan Liu*

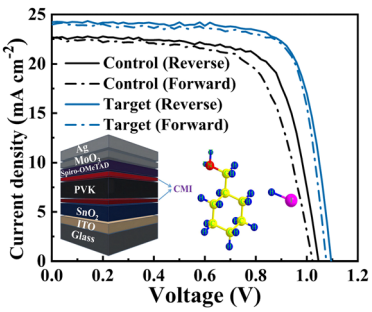
13029



Tartaric acid-based chiral polyamides: unraveling intrinsic multicolor clusteroluminescence and the solvent-modulated emission mechanism

Muye Yang, Zhengbin Wang, Lingli Zhang, Jingli Wang, Xin Li, Wenjie Zhang, Wei Zhao, Ge Shi, Yanjie He, Yuancheng Zhang, Xiaomeng Zhang, Peng Fu, Zhe Cui,* Xinchang Pang and Minying Liu

13042



Cyclohexylmethylammonium iodide-based bilateral interface engineering for efficient perovskite solar cells with improved stability and negligible hysteresis

Litong Zhou, Yu Huo, Guangmei Zhai,* Zhuoyu Zhao, Chunyan Yu,* Wei Jia and Bingshe Xu

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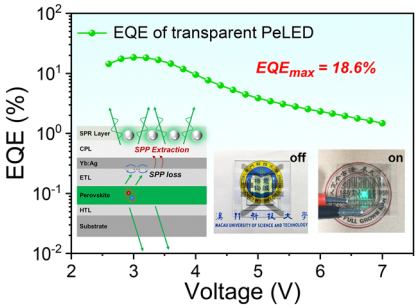
13054

Surface plasmon resonance modulation toward efficient transparent perovskite light-emitting diodes

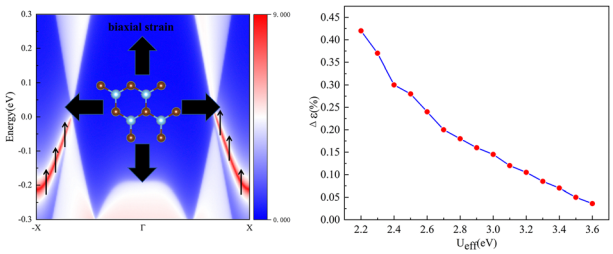
Zi-Yi Jin, Qi Sun, Wei He, Shuang-Qiao Sun, Guang-Li Li, Yue-Min Xie* and Man-Keung Fung*



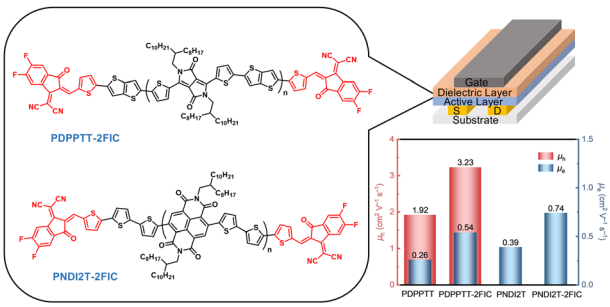
13061

Valley topological phase transitions under the combined effects of electronic correlation and strain in the H-TiSeBr monolayer

Xiang-Jie Chen, Yong-Hu Xu, Meng-Ran Qin, Pei Zhang, Zhen Gao,* Yao He* and Kai Xiong



13070

A facile end-capping strategy with strong electron withdrawing groups for enhancing field-effect mobility

Xian Huang, Kaiqing Liu, Xinyi Zhu, Xiaochan Zuo, Xiaoliang Mo,* Zhengran Yi* and Yan Zhao*