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Journal of Materials Chemistry C

Materials for optical, magnetic and electronic devices

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Cover

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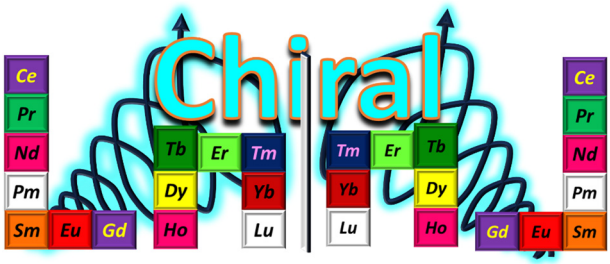
REVIEWS

9410

Chiral lanthanide complexes in the history of circularly polarized luminescence: a brief summary

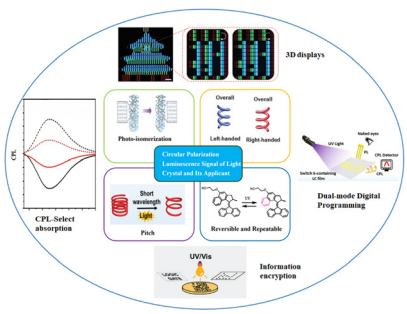
Diksha Thakur and Sivakumar Vaidyanathan*



9453

Circularly polarized luminescence signals of photoresponsive liquid crystals and their applications

Shengwen Bao, Shan Li, Ziran Tang, Yunhui Wan, Guoquan Zhou, Zehui Yang, Deli Sun,* Danfeng Ye* and Liangliang Zhu*



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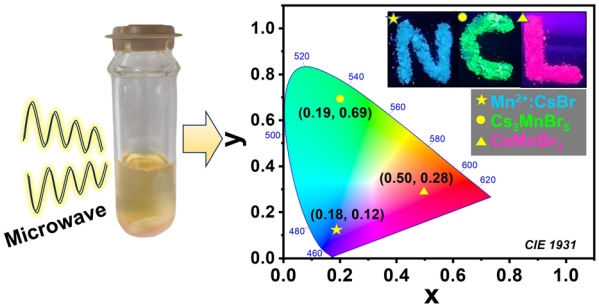
COMMUNICATIONS

9465

Rapid and efficient microwave-assisted synthesis of Mn-doped cesium bromide to phase engineered cesium manganese bromide nanocrystals with color-tunable RGB emission

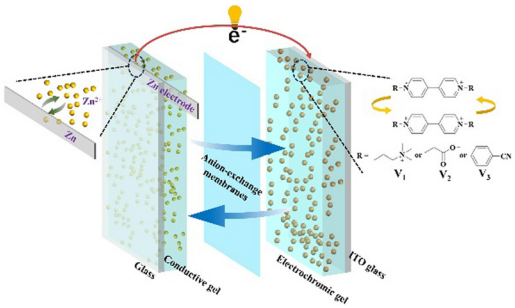
Pragati Sahu and Shatabdi Porel Mukherjee*



9474

Development of self-powered multicolored smart windows utilizing viologen derivatives

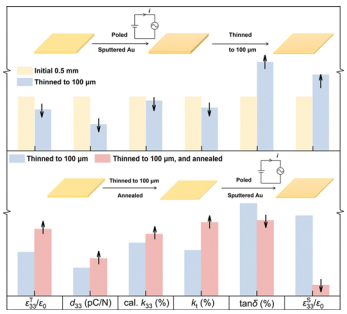
Wanxiong Yong, Weining Liu, Xiaoying Xin and Guodong Fu*



9483

The effect of machining-generated residual stress on the properties of single crystal piezoelectric layers in high-frequency ultrasonic transducers

Cong Luo, Chaorui Qiu, Yang Li, Mingwen Wang, Yi Quan and Zhuo Xu*

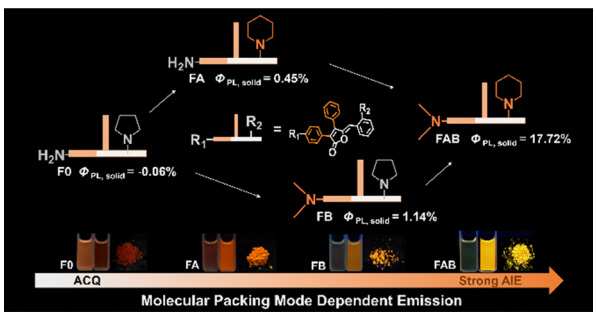


PAPERS

9494

ACQ/AIE transition of rofecoxib-based analogues *via* combined ring expansion and amino dimethylation strategies and their multiple stimuli-responsive fluorescent behaviors

Jingming Zhou, Yongbo Wei, Yu Cheng, Xia Wang, Tong Wu, Weiwei Zhang, Yinyin Yao, Yusheng Lu,* Hongqiang Qiu* and Lijun Xie*



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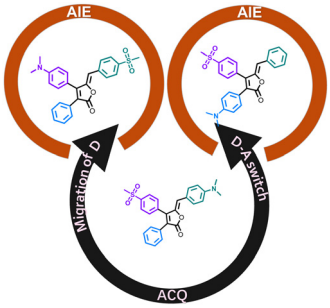
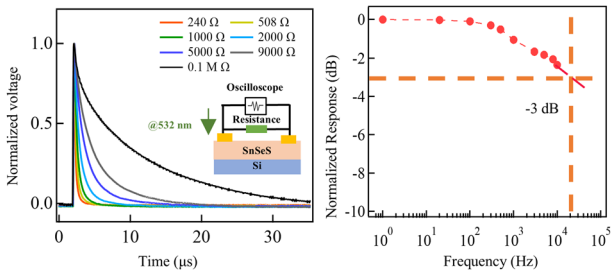
9502



Exploration of rational donor–acceptor adjustment strategies to achieve ACQ to AIE transformation and their potential applications as multi-functional AIEgens

Weiwei Zhang, Yongbo Wei, Fen Lin, Yinyin Yao, Xia Wang, Yongxiao Sun, Jingming Zhou, Tong Wu, Nannan Chen, Yusheng Lu,* Xiaoping Wu* and Lijun Xie*

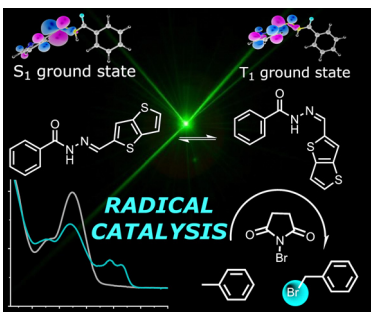
9513



A self-powered photodetector of SnSeS/p-Si heterojunction with high-performance

Yujuan Pei, Miaoran Kang, Weilong Deng, Qiang Fu, Xiangyu Fan, Yu Sui, Jubei Hu, Mengting Liu, Xianjie Wang* and Bo Song*

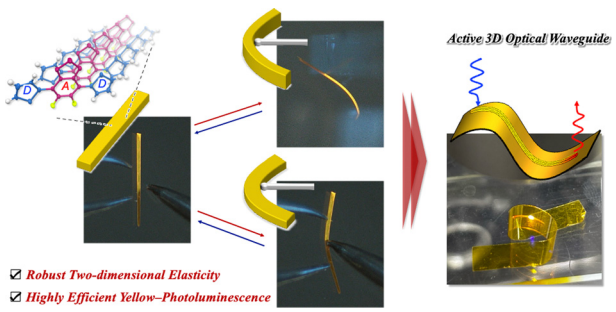
9520



Closed-to-open-shell ground state photoswitching of thienyl-based acylhydrazones

Martin Šetek, Valentino L. P. Guerra, Harry Robson, Anna O. Geleverya, Ondřej Maxa, Anna Lamancová, Václav Eigner, Dana Nachtigallová, Ján Tarábek and Petr Kovaříček*

9527



2D elastic fluorinated donor–acceptor type π-conjugated molecular crystals and their optical crystal–polymer hybrid films

Keigo Yano, Takumi Matsuo* and Shotaro Hayashi*

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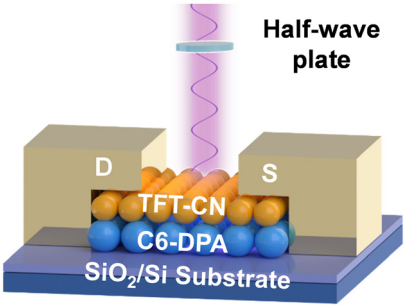
PAPERS

9536

Molecularly thin organic single-crystalline p–n heterojunctions by interfacial heteroepitaxy for high-performance polarization-sensitive photodetectors

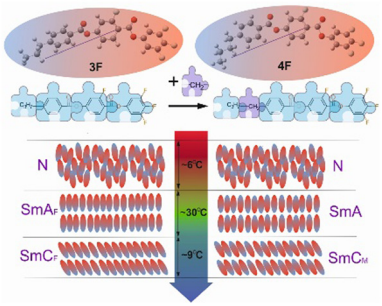
Ximeng Yao, Xianfeng Shen, Xinzi Tian, Yali Yu, Jiarong Yao, Yanling Xiao, Jiansheng Jie, Zhongming Wei,* Rongjin Li* and Wenping Hu



9545

The balance between paraelectricity and ferroelectricity in non-chiral smectic homologs

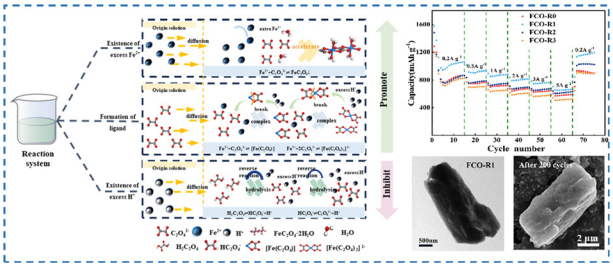
Dorota Węgłowska, Michał Czerwiński, Robert Dzienisiewicz, Paweł Perkowski, Jadwiga Szydłowska, Damian Pociecha and Mateusz Mrukiewicz*



9554

Recycling acidic iron wastewater for the production of an iron oxalate anode material with superior long-cycling lithium storage ability

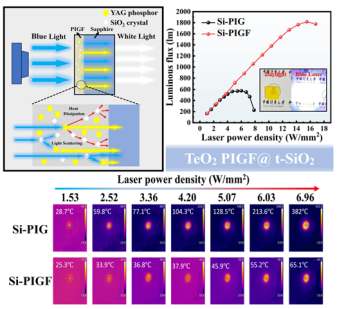
Bo Jin, Geng Gao, Qing Zhao, Keqi Chen, Guangping Zi, Shaoze Zhang, Yin Li, Junxian Hu, Yaochun Yao* and Keyu Zhang*



9568

A novel PIGF system with high thermal conductivity and luminous efficiency based on TeO_2 glass@ t-SiO_2 for laser lighting

Guoqing Jiang, Lishuo Huang, Feifei Huang,* Youjie Hua, Renguang Ye, Junjie Zhang and Shiqing Xu



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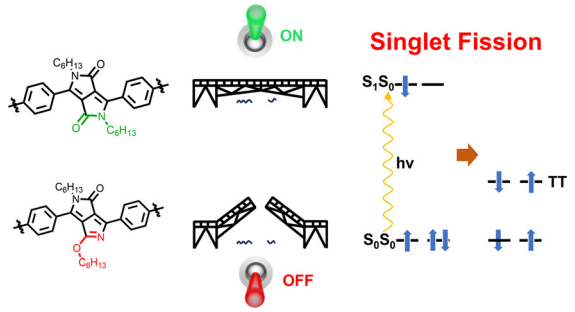
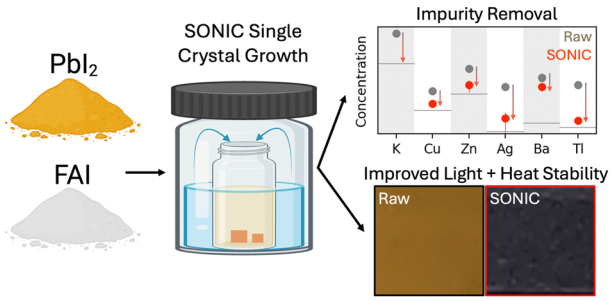


Switching intramolecular singlet fission in tetracene dimers *via* subtle changes in bridges

Ting Wang, San Zhang, Yun-Tao Ding, Bo-Yang Zhang, Buyang Yu, Rong Xu, Zhi-Xing Liu, Chun-Lin Sun,* Chunfeng Zhang,* Qiang Wang* and Hao-Li Zhang*

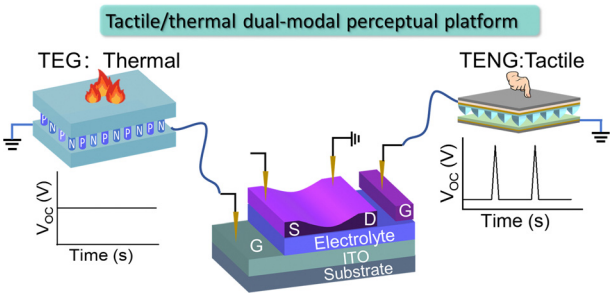
9584



Single crystal purification reduces trace impurities in halide perovskite precursors, alters perovskite thin film performance, and improves phase stability

Connor J. Dolan, Emma R. Yakel, Shiwei Liu, Ross A. Kerner, Jack R. Palmer, Kelly X. Vences, Hendrik M. Vossler, Clark Han, Sean P. Dunfield* and David P. Fenning*

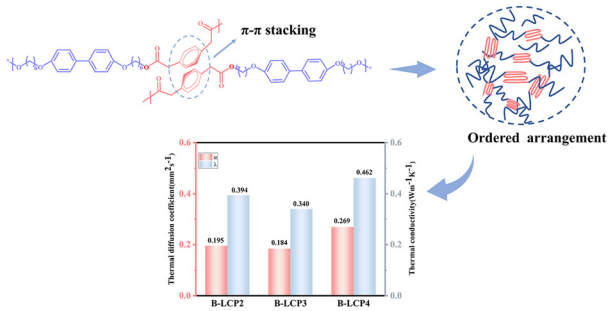
9593



Tactile/thermal dual-modal perceptual platform by integrating a thermoelectric generator and a triboelectric nanogenerator with an oxide neuromorphic transistor

Xin Huang, Si Yuan Zhou, Wei Sheng Wang, You Jie Huang, Bei Chen Gong, Jia Kang Di, Hui Xiao and Li Qiang Zhu*

9601



Enhanced intrinsic thermal conductivity of liquid crystalline polyester through monomer structure optimization in main chains

Panpan Yang, Yifei Wu, Kunxin Wang, Sheng Lu, Yuemiao Zhang, Junxi Wan,* Kun Wu* and Jun Shi

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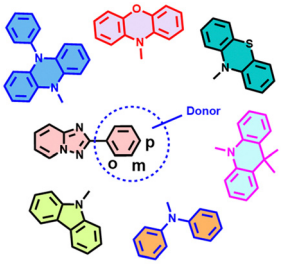
9611

Theoretical design and validation of [1,2,4]triazolo[1,5-*a*]pyridine-based TADF emitters through donor and linkage variations

Chetan Saini and K. R. Justin Thomas*

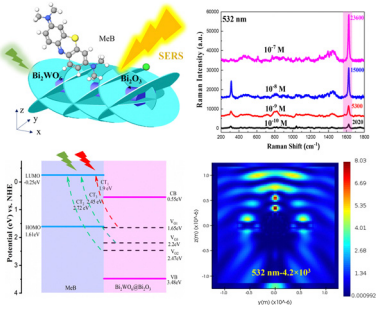


TADF: meta > ortho > para

9625

Mie scattering induced a dominant electromagnetic enhancement on the Bi_2WO_6@Bi_2O_3 SERS substrate *via* submicron-morphology design

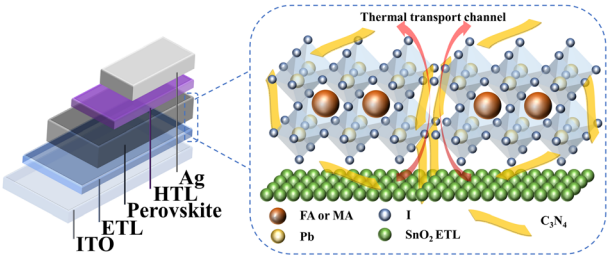
Lili Yang, Yusi Peng, Weihua Tang* and Yong Yang*



9632

Heat-dissipation regulation for improving the thermal stability and efficiency of planar perovskite solar cells

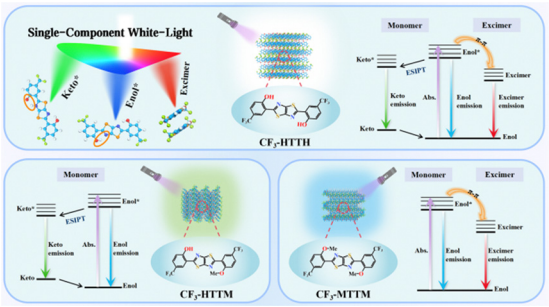
Jingyao Feng, Wenda Shi, Xin Wang,* Hui Wang, Yanan Wang, Hongwei Zhang, Lina Wang, Yuchen Song, Ziyu Liu, Pei Liu, Xueling Zhao, Wenqin Li, Lifei Chen* and Xiaoming Zhao*



9644

Deciphering a novel mechanism for single-component white light emission: synergistic effects of ESIPT and excimers

Siqi Wang, Hongyan Mu, Jialin Liang, Xinlin Yang, Jiaan Gao, Hui Li* and Guangyong Jin*



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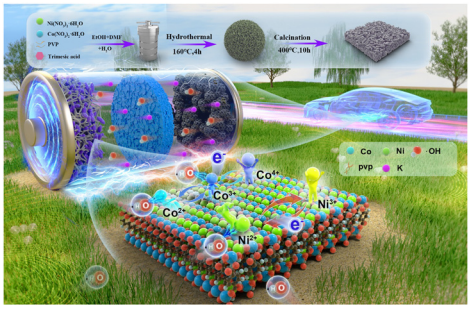
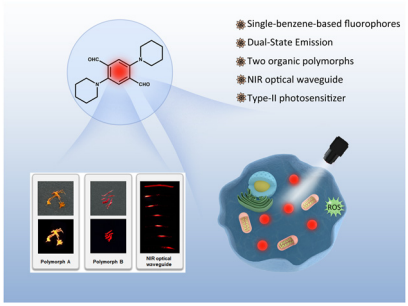


Ordered Co/Ni oxide nanostructures from MOFs: enhancing efficiency in hybrid asymmetric energy devices

Xiaolong Leng, S. V. Prabhakar Vattikuti, Yumei Li, P. Rosaiah, Abdullah N. Alodhayb, Saravanan Pandiaraj, Burragoni Sravanthi Goud, Ganesh Koyyada,* Jae Hong Kim,* Nam Nguyen Dang* and Jaesool Shim*

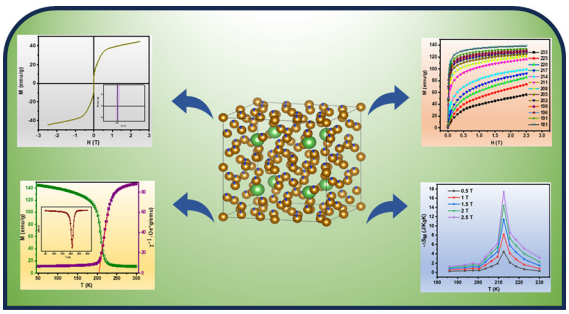
9667



Design and synthesis of single-benzene-based fluorophores with red/NIR emission for dual-function optical waveguides and photodynamic therapy

Jianan Dai, Xuan Wang, Zhuolin Zhan, Chunyu Wei, Yuan Chai, Jie Hua, He Dong, Guofeng Wang, Jin Wang,* Jing Liu* and Laiping Fang*

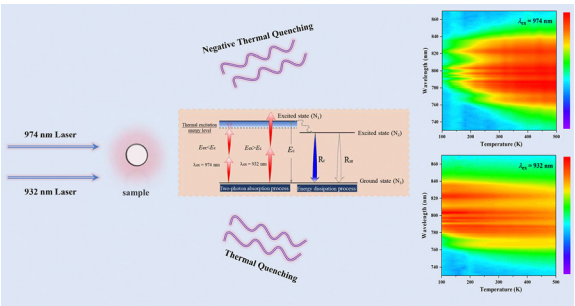
9673



Unveiling the magnetic, magnetocaloric and critical behaviour of melt spun lanthanum iron silicon alloys: a comprehensive study

Anjana Vinod, D. Arvindha Babu and W. Madhuri*

9685



Modulating excitation light to alter temperature-dependence of two-photon upconversion luminescence in Yb^{3+}/Tm^{3+} co-doped LuAG transparent ceramics

Zihao Wang, Yimin Zhou, Xuan Li, Chenyang Li, Guowei Du* and Fei Tang*

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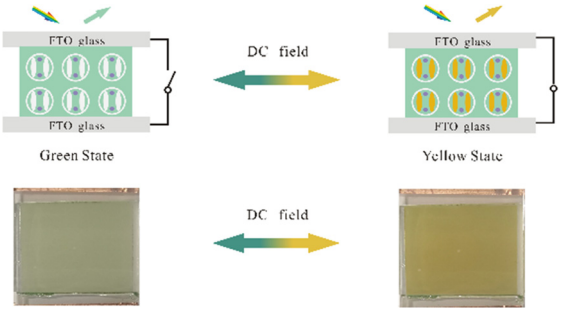
Electrically tunable coloration in polymer dispersed liquid crystal films for adaptive camouflage

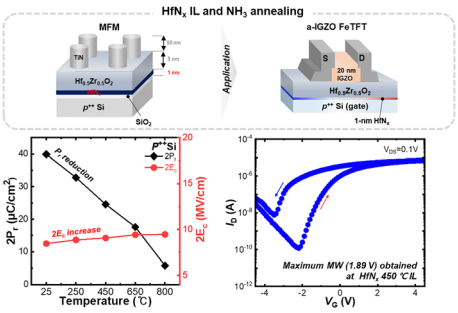
Wei Wu, Xiaohui Sun, Xueying Zhao, Baolei Liu, Guohua Wu, Xuyang Zhang, Bo Wang, Xiangwei Wang, Xianhui Rong* and Nana Liu*



9705

Improving the memory window of a ferroelectric thin film transistor using an atomic layer deposited HfN_x interfacial layer

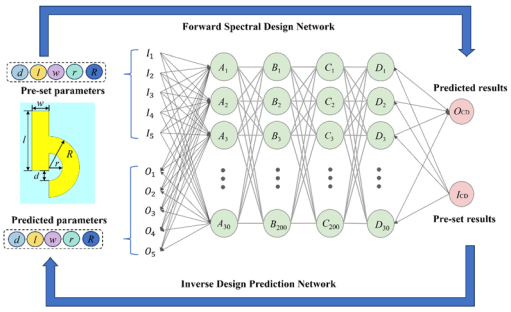
Hyun Woo Nam, Jae Hoon Lee, Seung Kyu Ryoo, Seong Jae Shin, Kun Hee Ye, Kyung Do Kim, Seung yong Byun, In Soo Lee, Suk Hyun Lee, Jae Hee Song, Jung hae Choi and Cheol Seong Hwang*



9717

A deep learning-driven forward and inverse cooperative network for circular dichroism in chiral metasurfaces

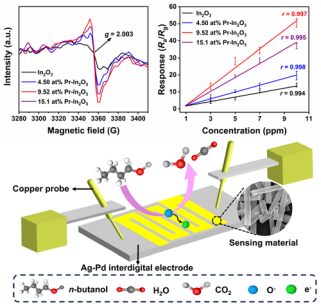
Zongli Hu, Wei Su,* Kun Hu and Bin Tang*



9724

MOF-derived Pr-doped In_2O_3 hollow tubes rich in oxygen vacancies for enhancing the *n*-butanol sensing performance

Xianzhong Wang, Fubo Gu* and Zhihua Wang*



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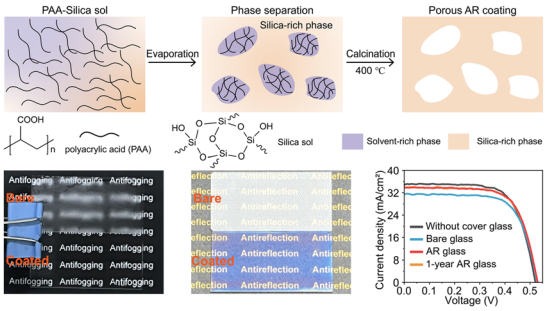
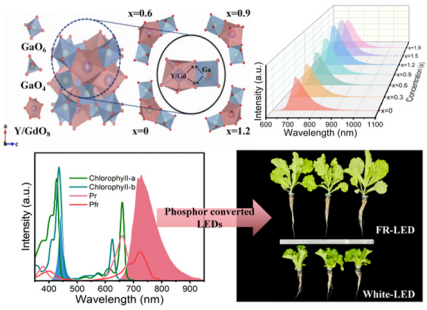


High-performance meso–macroporous SiO_2 antireflective coatings with enhanced optical and mechanical stability for solar energy applications

Enfeng Yang, Xiaotao Yang,* Dezhao Hao, Haitao Deng, Jianning Yu, Ye Tian* and Lei Jiang

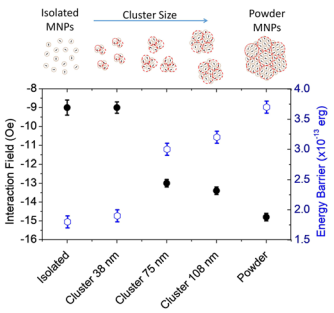
9747



Far-red emitting phosphors for plant growth applications: fitted and enhanced *via* cation substitution of Gd^{3+}

Chunli Peng, Jueran Cao, Baoling Tang, Tianrui Li, Mingkai Wei, Haoran Zhang, Xuejie Zhang, Mingtao Zheng, Maxim S. Molokeev and Bingfu Lei*

9756



Magnetic properties and dipolar interactions of Fe_3O_4 nanoparticle clusters produced by bottom-up self-assembly

Fernando Fabris,* Adriele A. Almeida, Pablo Rafael Trajano Ribeiro, Kleber Roberto Pirota and Diego Muraca

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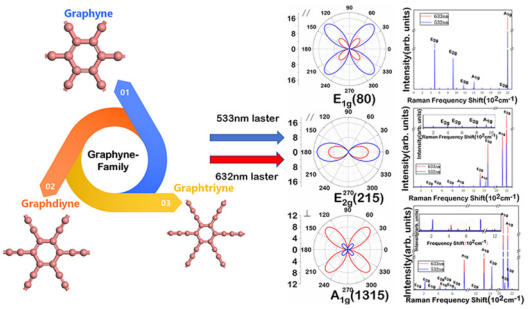

Raman spectra of the graphyne-family: graphyne, graphdiyne and graphtriyne

Kunquan Lin, Haiming Huang,* Junyan Zhang, Qiuyi Zhong, Weiliang Wang and Shaolin Zhang

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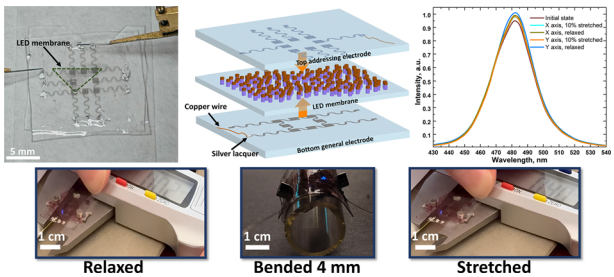
9779

Elastic blue light-emitting diode based on InGaN/GaN microwires and SWCNT-on-PDMS matrix electrode

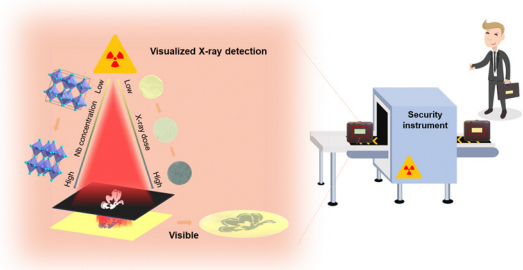
Diana Kolesina, Fedor Kochetkov, Alexander Vorobyev, Akanksha Kapoor, Kristina Novikova, Alexander Goltaev, Anastasia Yakubova, Artem Baranov, Timur Katunov, Nikita Fominykh, Vladimir Neplokh, Dmitriy V. Krasnikov, Albert G. Nasibulin, Joël Eymery, Christophe Durand, Maria Tchernycheva and Ivan Mukhin



9787

Radiochromism in Nb-sensitized WO_3 as an instant and cumulative X-ray dose recorder

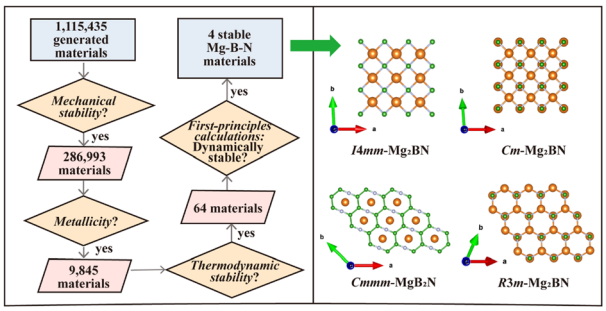
Ru Jia, Long Yuan,* Meng Yuan, Zhaoliang Yu and Xiangdong Meng*



9799

Machine learning and first-principles calculations for the prediction and analysis of superconductivity in Mg–B–N systems

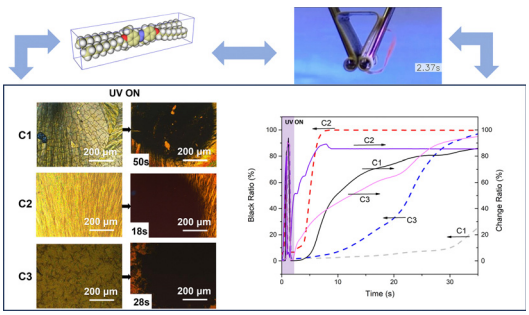
Jiajun Jiang, Yamin Xue, Liliang Zha, Shunwei Yao, Ben Wang, Wenjing Hu, Lin Peng,* Tingting Shi, Jing Chen, Xiaolin Liu and Jia Lin*



9809

Performance analysis of photo-liquefiable azobenzene derivatives for improving the responsive ability of their functional devices

Jing Hu, Mingming Yu and Haifeng Yu*



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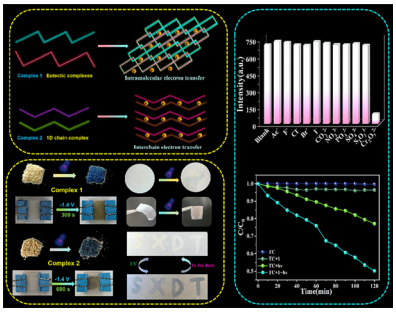
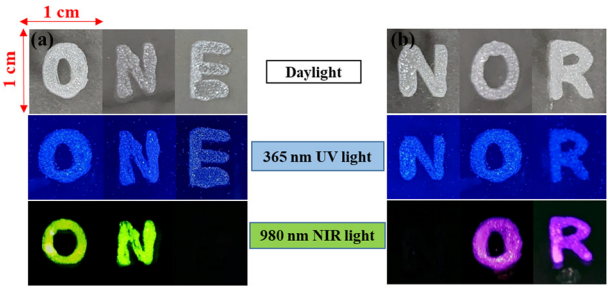
9820



Multistimuli-responsive materials based on two pyridinium ion-based complexes and their applications in tetracycline degradation and information anticounterfeiting

Dong-Dong Yang,* Jian-Hua Xue, Shu-Tao Li, Xiao-Ting Guo, Yuan-Yu Yang,* Peng-Yi Ma, Yong-Sheng Shi and Qi Ma*

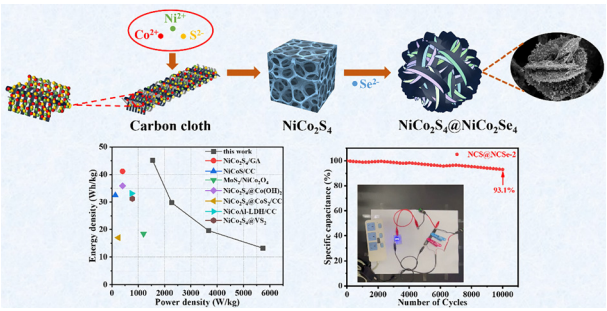
9830



Oxygen-induced downshifting and lanthanide upconversion luminescence in Sr_2YbF_7 nanoparticles for dual-mode security applications

Jyoti Yadav, Ramjan Mallick, Satish Kumar Samal, Manwi Shankar, Srungarpu N. Achary and Boddu S. Naidu*

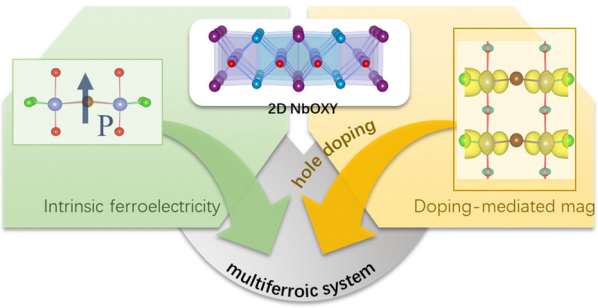
9843



$NiCo_2S_4$@$NiCo_2Se_4$ *in situ* grown on carbon cloth for performance-enhanced supercapacitor electrodes

Xiuyan Shi, Huiqun Yin, Yiyan Mo, Wangsheng Li, Xian Huang, Kaiyou Zhang,* Aimiao Qin and Shuoping Chen

9855



Tunable magnetism in two-dimensional ferroelectric Janus NbOXY (X, Y = Cl, Br, I; X ≠ Y) by hole doping

Yunlai Zhu, Xi Sun, Yongjie Zhao, Junjie Zhang, Ying Zhu, Tong Zhu, Ke Wang, Zuyu Xu, Zuheng Wu* and Yuehua Dai*

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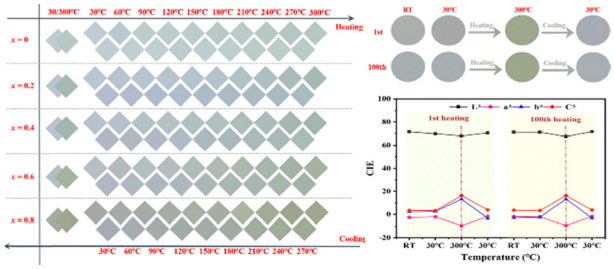
PAPERS

9866

Dual thermochromic behavior of bismuth-doped neodymium molybdate: excellent cycling stability and color changes

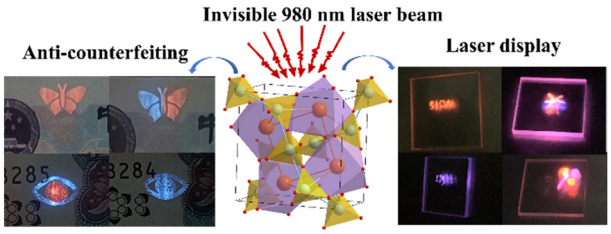
Junlin Yan, Huimin Li,* Yiming Wang, Xiaodong Li* and Su Zhang*



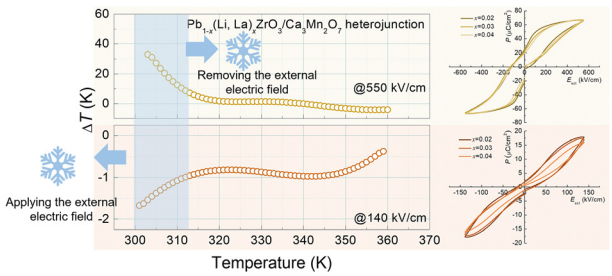
9875

Upconversion phosphors of $CaLaAl_3O_7$:RE^{3+}/Yb^{3+} (RE = Tm, Ho) and their multifunctional applications for multi-color anti-counterfeiting and laser displays

Shanshan Zhao, Hehe Dong, Weichang Li, Lei Zhang, Shikai Wang,* Chunlei Yu* and Lili Hu*



9888

Coexistence of large positive and negative electrocaloric effects near room temperature in a $Pb_{1-x}(Li,La)_xZrO_3/Ca_3Mn_2O_7$ heterojunction

Wenyue Zhao, Zhao Wang, Yazhou Peng, Lei Shi, Wenjing Hua, Xiaoxia Yang, Jie Wang, Weidong Fei and Yu Zhao*