

Journal of Materials Chemistry C

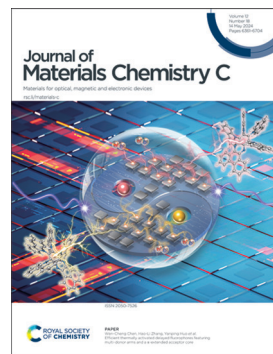
Materials for optical, magnetic and electronic devices

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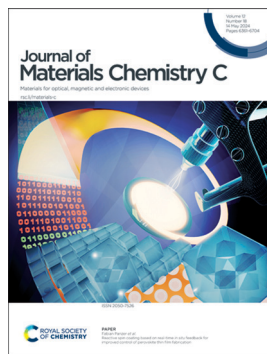
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See Wen-Cheng Chen, Hao-Li Zhang, Yanping Huo *et al.*, pp. 6406–6414. Image reproduced by permission of Wen-Cheng Chen from *J. Mater. Chem. C*, 2024, 12, 6406.



Inside cover

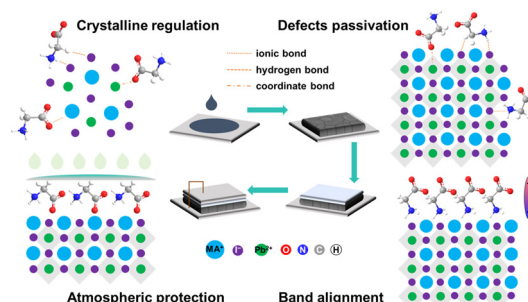
See Fabian Panzer *et al.*, pp. 6415–6422. Image reproduced by permission of Simon Biberger from *J. Mater. Chem. C*, 2024, 12, 6415.

REVIEW

6374

Recent advances in ionic molecules applied in perovskite solar cells

Yuansi Xie, Bo Wu and Deqing Gao*

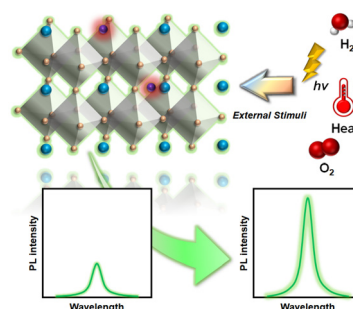


COMMUNICATION

6395

Investigation of potassium doping and defect healing mechanism in core-shell CsPbBr₃/SiO₂ quantum dots

Dokyum Kim, Yong-Ryun Jo, Soogeun Kim, Sang-Youp Yim,* Joon-Hyung Lee* and Chang-Lyoul Lee*



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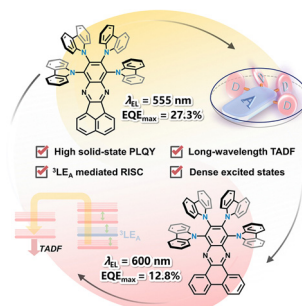
Fundamental questions
Elemental answers

PAPERS

6406

Efficient thermally activated delayed fluorophores featuring multi-donor arms and a π -extended acceptor core

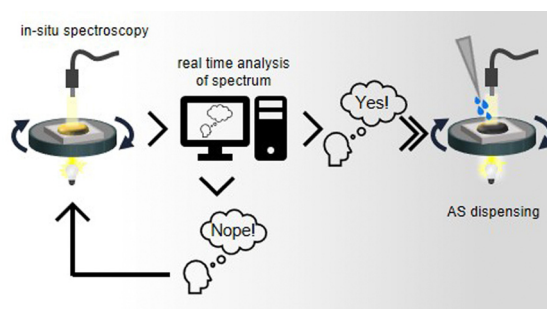
Bo Liu, Si-Wei Chen, Wen-Cheng Chen,* Longjiang Xing, Ji-Hua Tan, Wei-Le Wu, Xiao-Long Liu, Jia-Xiong Chen, Hao-Li Zhang* and Yanping Huo*



6415

Reactive spin coating based on real-time *in situ* feedback for improved control of perovskite thin film fabrication

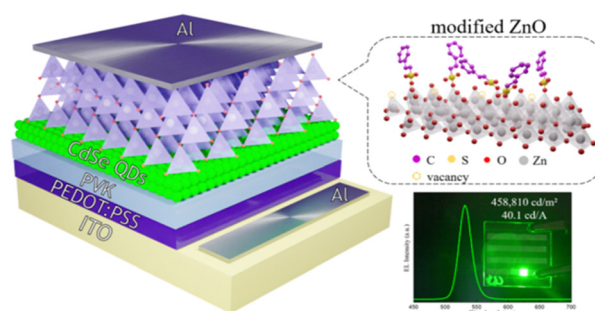
Simon Biberger, Maximilian Spies, Konstantin Schötz, Frank-Julian Kahle, Nico Leupold, Ralf Moos, Helen Grüninger, Anna Köhler and Fabian Panzer*



6423

Surface functionalization of ZnO nanoparticles with sulfonate molecules as the electron transport layer in quantum dot light-emitting diodes

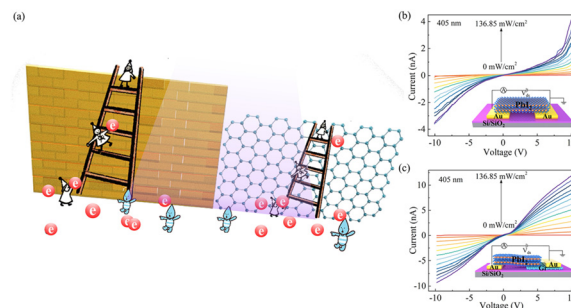
Yu-Cheng Chang, Sheng-Hsiung Yang* and Wei-Sheng Chen



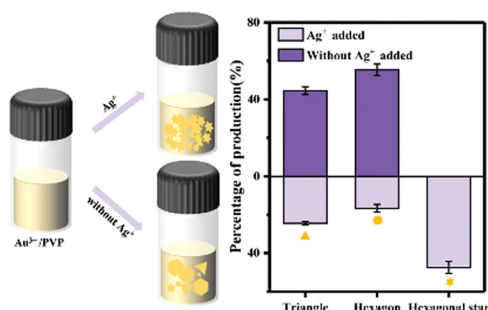
6433

Kilogram-scale high-yield production of PbI_2 microcrystals for optimized photodetectors

Huiru Sun, Longxing Su,* Qiang Zeng, Yuan Pan, Zhenshan Guo, Kang An, Zhonghui Xia, Zibin Huang, Fangyang Liu* and Hongyu Chen*



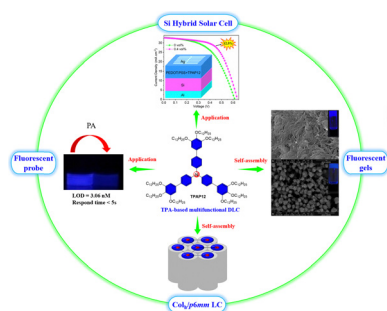
6443



Silver ions induced growth of plasmonic Au hexagonal star plates

Lingbo Tong, Xinlei Zhang, Huan Chen,* Xiaohu Mi,* Jinping Li and Zhenglong Zhang

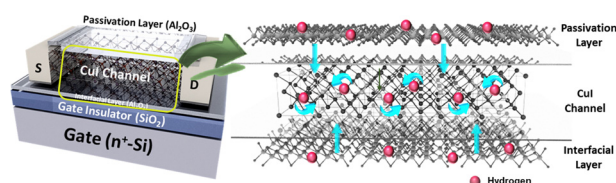
6450



A novel multifunctional C₃-symmetric triphenylamine discotic liquid crystal: synthesis, columnar self-assembly, organogel behavior, selective detection of PA and application in Si solar cells

Lu Liu, Jiayang Li, He Zhu, Hanyan Yang, Xi Feng, Daping Xiao, Yu Yang* and Hongfei Gao*

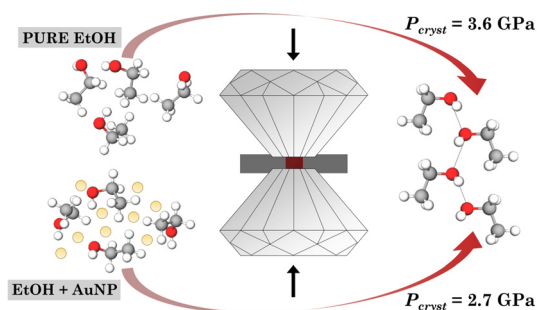
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Effects of solution processable CuI thin films with Al₂O₃-based sandwiched architecture for high-performance p-type transistor applications

Hyun-Ah Lee, Tae In Kim, Hyuck-In Kwon* and Ick-Joon Park*

6469



The influence of PEGylated gold nanoparticles on the solidification of alcohols

Camino Martín-Sánchez,* Ana Sánchez-Iglesias, José Antonio Barreda-Argüeso, Jesús González and Fernando Rodríguez

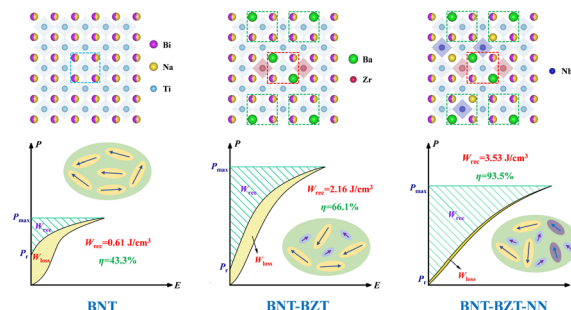


PAPERS

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Achieving outstanding energy storage behaviors via combinatorial optimization design in BNT-based relaxor ferroelectric ceramics under medium–low electric fields

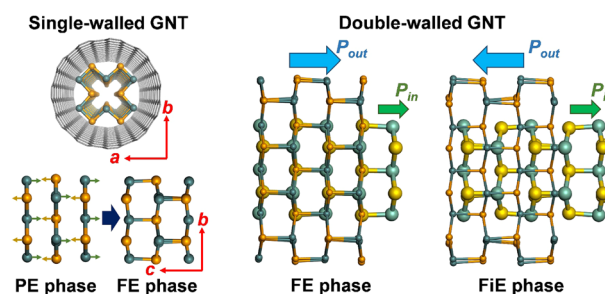
Jian Yang, Xiaolong Zhu, Haotian Wang, Yixiao Zhang, Pengfei Guan, Shiguang Yan and Ming Zheng*



6487

Adjustable 1D ferroelectricity and ferrielectricity in faceted GeSe nanotubes

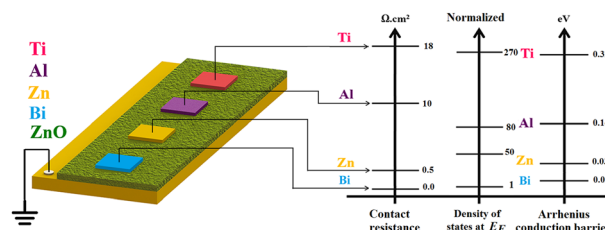
Shixin Song, Churen Gui, Shuai Dong, Dan Liu* and Jie Guan*



6495

Contact resistances between ZnO and Ti, Al, Zn, and Bi: correlation with the density of states at Fermi energies

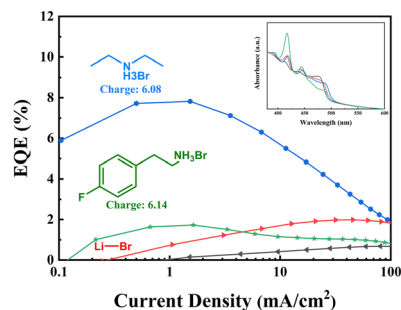
Faramarz Hossein-Babaei* and Armin Alizadeh



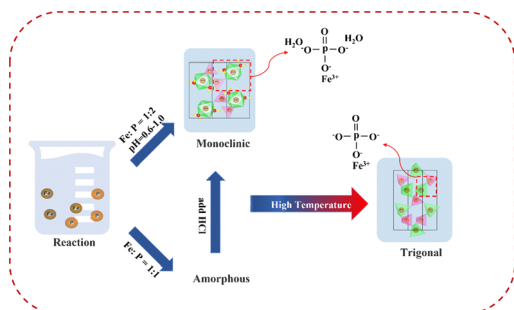
6503

Improving performance of sky-blue perovskite light-emitting diodes by triple additives

Dan Chen, Ganshuai Zhang, Yu Mao, Ji Chen Zhao, Xiang Lan Huang, Jian Wang* and Junbiao Peng



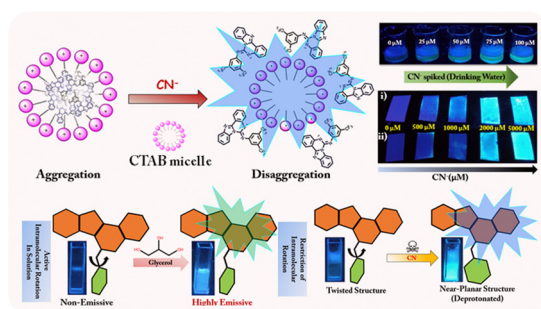
6511



Structural properties and electrochemical performance of different polymorphs of FePO_4 as raw materials for lithium ion electrodes

Yajie Yuan, Junxian Hu, Li Wang, Yin Li* and Yaochun Yao*

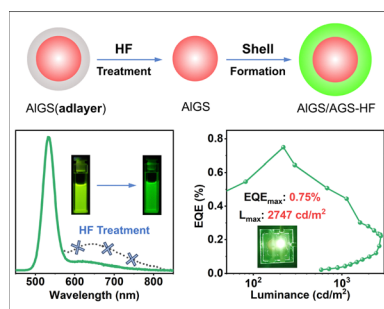
6519



Twisted-intramolecular-charge-transfer based fluorogenic nano-probes for ultrafast cyanide sensing in water and micellar medium

Oiyao Appun Pegu and Gopal Das*

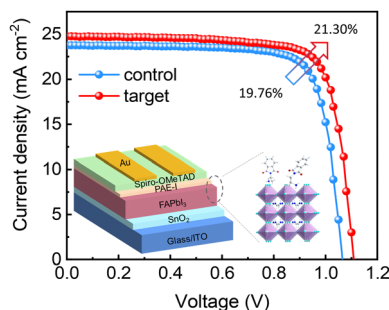
6528



Highly efficient narrowed emitting $\text{AgIn}_x\text{Ga}_{1-x}\text{S}_2/\text{AgGaS}_2$ quantum dots via an HF-assisted one-pot synthesis strategy and their light-emitting diodes

Zilong Li, Sheng Cao,* Kai Wang, Qiuyan Li, Yuanjin Huang, Hui Fu, Jialong Zhao, Weiyong Yang and Jinju Zheng*

6540



Improving the performance and stability of perovskite solar cells via surface passivation of phthalimide *N*-alkylammonium iodides

Yao Wang, Shan-Ci Chen,* Shuya Tai, Di Wang, Yunlong Ma,* Jishan Wu* and Mei-Jin Lin*

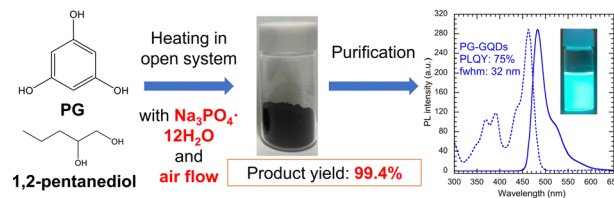


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Open system massive synthesis of narrow-band blue and green fluorescent graphene quantum dots and their application in water sensing

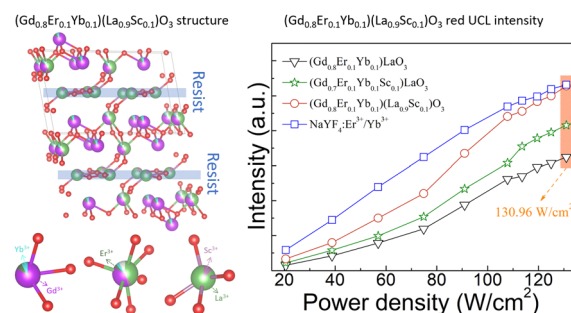
Yukino Ochi, Ayano Otani, Rika Katakami, Akihiro Ogura, Ken-ichi Takao, Yoshiki Iso* and Tetsuhiko Isobe*



6559

Excellent red upconversion luminescence in $\text{GdLaO}_3:\text{Er}^{3+}/\text{Yb}^{3+}/\text{Sc}^{3+}$ under 980 nm laser excitation

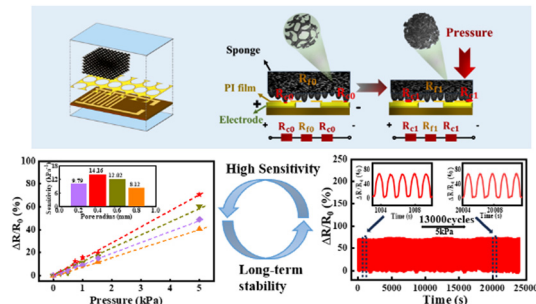
Meiling Li, Yongze Cao,* Lihong Cheng, Tianshuo Liu, Yuhan Fan, Jinsu Zhang and Baojiu Chen*



6568

Sensitivity–stability trade-off in conductive foam-based pressure sensors

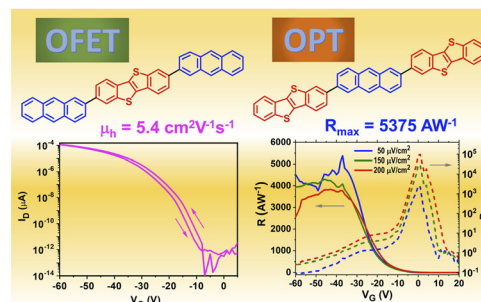
Weigang Zhu, Xianzhe Liu,* Xinqing Chen, Kai Chen, Min Huang, Fengming Hu, Fanchao Zeng, Mengxia Yu, Mingxin Chen, Aiping Huang, Zhiming Chen* and Jianyi Luo*



6578

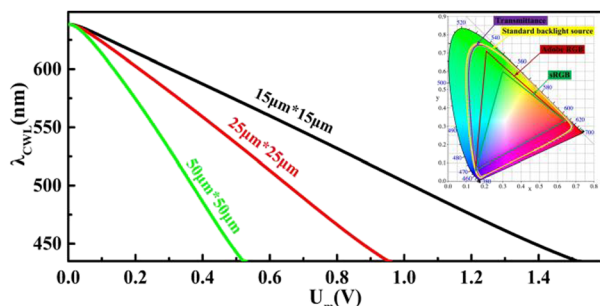
Anthracene-[1]benzothieno[3,2-b][1]benzothiophene (BTBT) dyad and triads as p-type semiconductors for organic field-effect transistors and phototransistors

Maowei Qi, Dongwei Zhang,* Yanan Zhu, Changbin Zhao, Aiyuan Li, Fobao Huang, Yaowu He* and Hong Meng*



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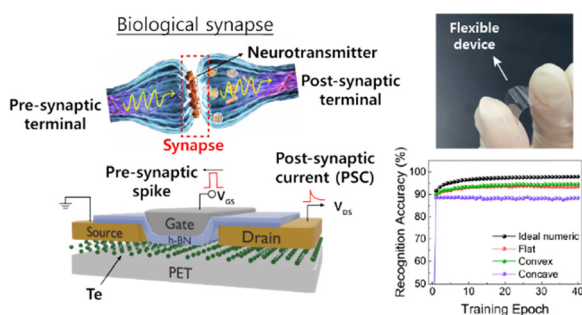
6588



Broadly tunable filter based on a graphene MEMS-photonic crystal composite structure and its application in single-pixel full-color displays

Wenjing Liu, Guanghui Li, Chaomeng Chen, Jiangtao Liu* and Zhi-Yuan Li*

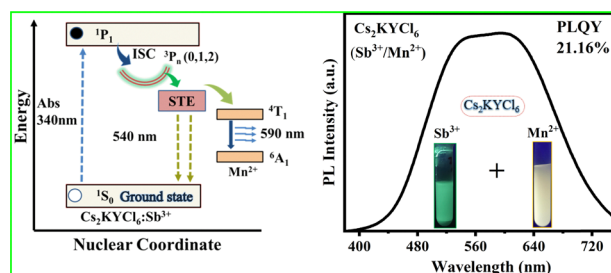
6596



An extremely low-power-consumption reconfigurable two-dimensional tellurene artificial synapse for bio-inspired wearable edge computing

Bolim You, Jeechan Yoon, Yuna Kim, Mino Yang, Jina Bak, Jihyang Park, Un Jeong Kim,* Myung Gwan Hahm* and Moonsang Lee*

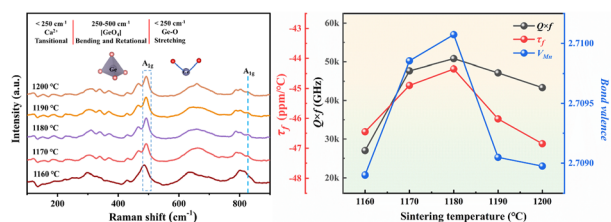
6606



Sb³⁺/Mn²⁺ co-doped lead-free Cs₂KYNiCl₆ perovskites for white light-emitting diodes

Muhammad, Zengce Liu, Junchun Li, Yuanyuan Sheng, Yajing Chang, Ping Chen* and Yang Jiang*

6615



Influence of sintering characteristics and structural properties on the microwave dielectric properties of non-stoichiometric Ca₃Mn_{2+*x*}Ge₃O_{12+*δ*} (*x* = 0–0.2) ceramics

YanJun Liu, Guoqiang He, Yuan Nie, Wenjie Zhang, Ziqi Zhao and Huanfu Zhou*

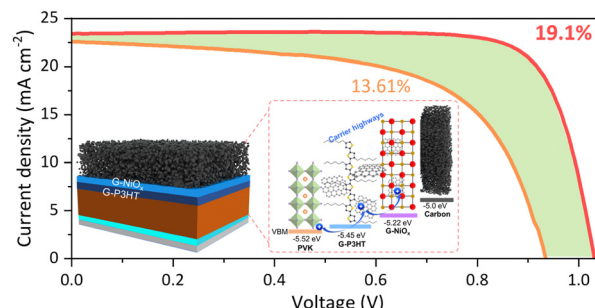


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Boosting the fill factor and open-circuit voltage of carbon-based perovskite solar cells with a graphene co-doped P3HT/NiO_x hole-transporting bilayer

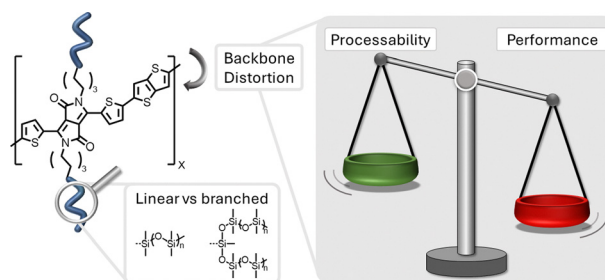
Yuhao Song, Bingjie Xu, Yingying Deng, Miaosen Yao, Junjie Tong, Qichao Wang, Wanlong Wang, Gentian Yue, Weifeng Zhang, Chen Dong* and Furui Tan*



6637

Trade-off between processability and device performance in donor–acceptor semiconductors revealed using discrete siloxane side chains

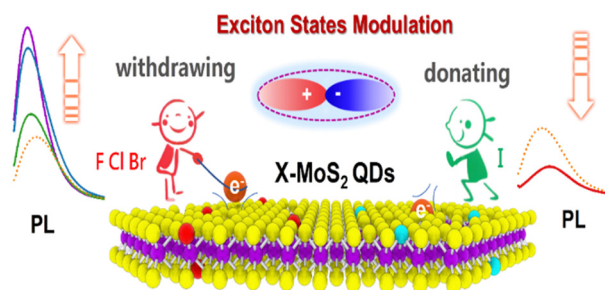
Bart W. L. van den Bersselaar, Elisabeth H. W. Cattenstart, Kavinraaj Ella Elangovan, Chen Yen-Chi, Bas F. M. de Waal, Joost van der Tol, Ying Diao, E. W. Meijer and Ghislaine Vantomme*



6645

Halogen ion doping mediated exciton state modulation in MoS₂ quantum dots for fluorescence tuning and optical anti-counterfeiting

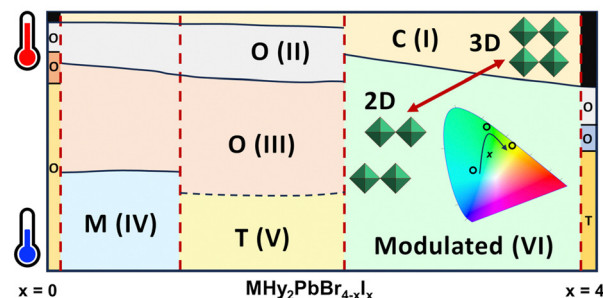
Feng-Yi Wu,* Yuan-Sheng Cheng, Kong-Lin Wu, Rong Wu, Rui Yu, Ping-Li Guan, Yu-Wen Cheng, Wen-Jiang Li, Ji-Liang Yang and Xian-Wen Wei*



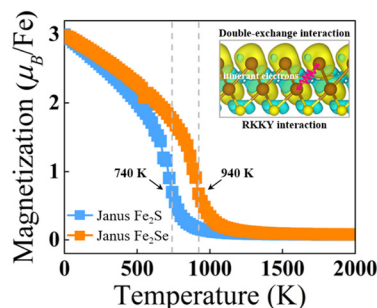
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Layered methylhydrazinium lead halide perovskites: new crystal polymorphs with a tailored band gap and photoluminescence colour via halide substitution

Dawid Drozdowski,* Adam Kabański, Dagmara Stefańska, Maciej Ptak, Mirosław Mączka and Anna Gągor*



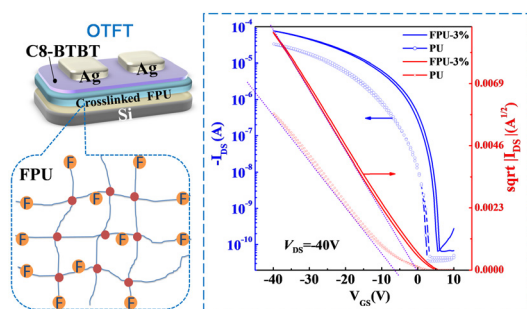
6663



Ferromagnetism above room temperature in Janus Fe₂X (X = S, Se) monolayers

Fanjunjie Han and Guochun Yang*

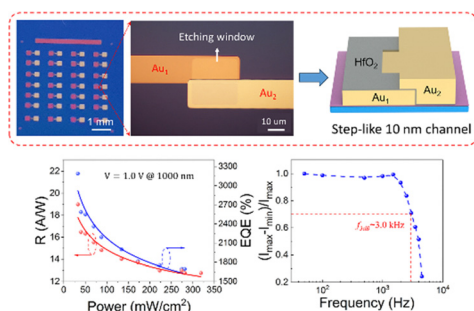
6671



Low temperature UV cross-linked fluorinated polyurethane for organic thin film transistors

Ruixia Duan, Sixu Liu, Xuying Liu, Miaoming Huang, Suqin He, Hao Liu,* Wentao Liu* and Chengshen Zhu

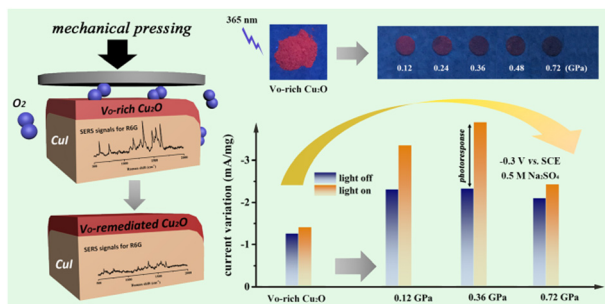
6680



Step-like 10-nm channel for high-performance PbS colloidal quantum dots near-infrared photodetector

Xuanguang Su, Jianfu Han, Yiwei Liu, Kai Huang* and Juexian Cao*

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Tuning defects in Cu₂O nanostructures via room temperature mechanical pressing: impacts on defect-dependent optical and photoelectrochemical sensing performances

Yun Cai, Wenyao Zhou, Hongli Wang, Jiajie Bi,* Fengjiao Yu, Jun Fang and Yang Yang*



6696

Spectroscopic properties of yellow and red InP/ZnSe/ZnS quantum dots

Yanyan Cui, Qianqian Wu, Junzi Li, Yang Gao, Fan Cao, Xuyong Yang* and Tingchao He*

