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Journal of Materials Chemistry C

Materials for optical, magnetic and electronic devices

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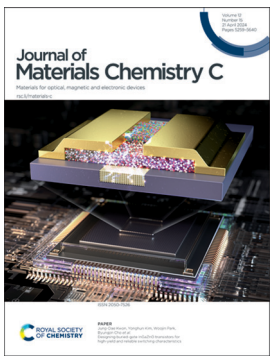

Cover
See Jung-Dae Kwon, Yonghun Kim, Woojin Park, Byungjin Cho *et al.*, pp. 5347–5354.
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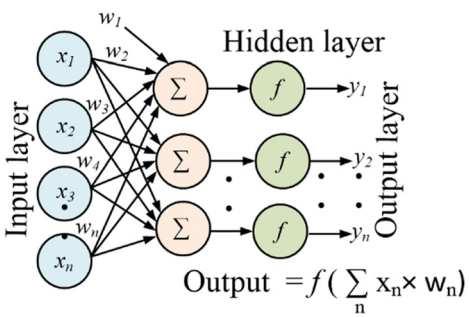

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REVIEWS

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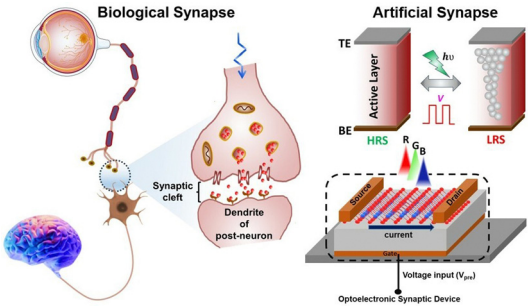
Recent developments in the state-of-the-art optoelectronic synaptic devices based on 2D materials: a review

Rajesh Jana, Sagnik Ghosh, Ritamay Bhunia* and Avijit Chowdhury*



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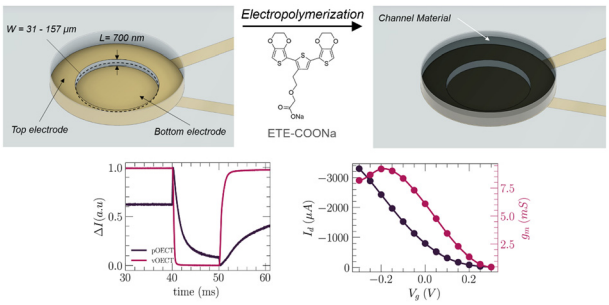
Vertical organic electrochemical transistor platforms for efficient electropolymerization of thiophene based oligomers

Maciej Gryszel, Donghak Byun, Bernhard Burtscher, Tobias Abrahamsson, Jan Brodsky, Daniel Theodore Simon, Magnus Berggren, Eric Daniel Glowacki, Xenofon Strakosas* and Mary Jocelyn Donahue*



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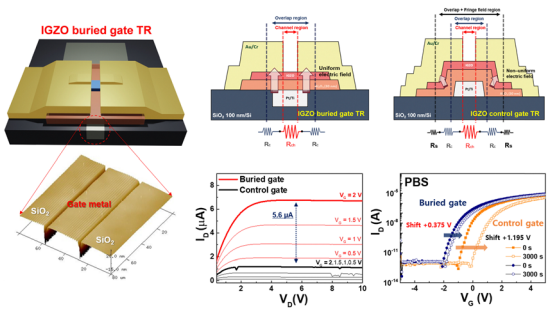
Designing buried-gate InGaZnO transistors for high-yield and reliable switching characteristics

Do Hyeong Kim, Seyoung Oh, Ojun Kwon, Soo-Hong Jeong, Hyun Young Seo, Eunjeong Cho, Min Jeong Kim, Wondeok Seo, Jung-Dae Kwon,* Yonghun Kim,* Woojin Park* and Byungjin Cho*



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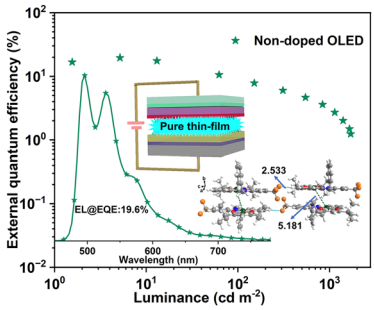
Highly efficient platinum(II) complexes overcoming Pt–Pt interactions and their applications in organic light-emitting diodes

Keke Wan, Chen Lu, Nannan Cong, Kuo Lv, Zenghui Dai and Feng Li*



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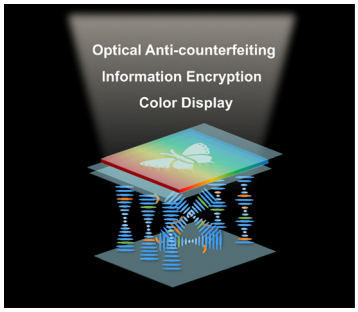

Phototuning structural color and optical switching cholesteric textures in azobenzene-doped cholesteric liquid crystals

Hongbo Lu,* Ying Cao, Hao Bai, Mingyan Ren, Longzhen Qiu, Jun Zhu and Miao Xu

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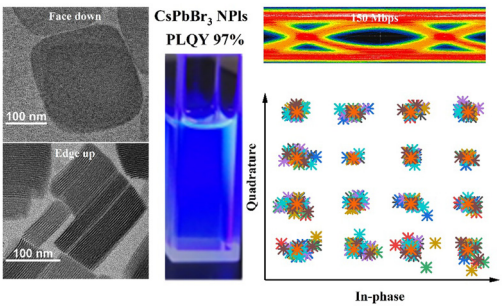

Synthesis and optical wireless communication application of high efficiency extreme blue $CsPbBr_3$ nanoplates

Zhanpeng Wang, Luyang Hou, Jingzhou Li,* Jiahao Zhang, Hongyu Yang, Yichi Zhong, Hongxing Dong* and Long Zhang

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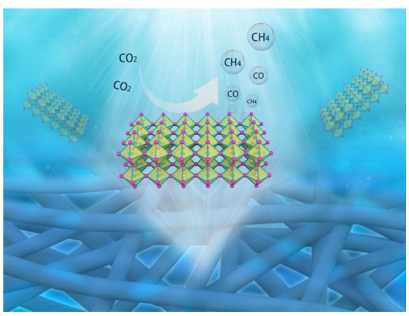

Promoting photoreduction selectivity *via* synergetic utilization between vacancy and nanofiber structure over flexible Zr/TiO_{2-x} nanofiber films

Shan Jiang, Haoze Li, Wenke Gui, Yingbing Zhang, Chenchen Zhang, Lei Zhang, Jianping Yang and Li Wang*

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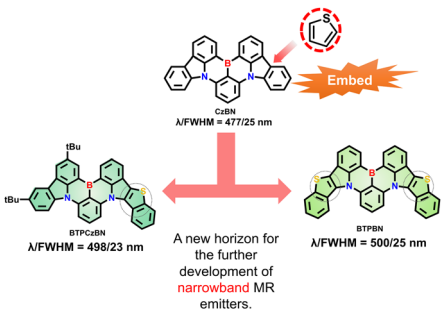

Efficient narrowband bluish-green emitters derived from a double-carbazole-fused organoboron multiple resonance skeleton with internal-structure modification

Tong-Yuan Zhang, Ying-Chun Cheng, Hui Wang, Feng Huang, Xin Xiong, Xiao-Chun Fan,* Jia Yu, Kai Wang* and Xiao-Hong Zhang*

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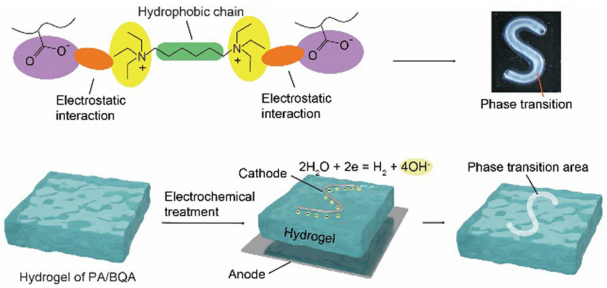
Electrochemical phase transition of ionic hydrogels

Jiayi Liu and Lidong Zhang*



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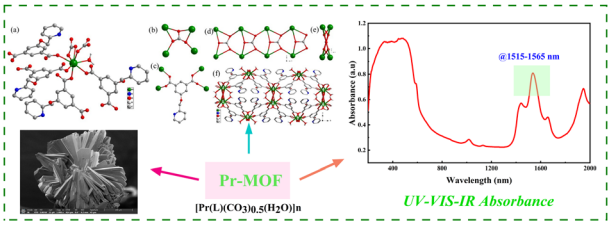
Application of Pr-MOFs as saturable absorbers in ultrafast photonics

Xiaohui Du, Houting Liu,* Shaokai Li, Zefei Ding, Chenyue Liu, Cunguang Zhu* and Pengpeng Wang*



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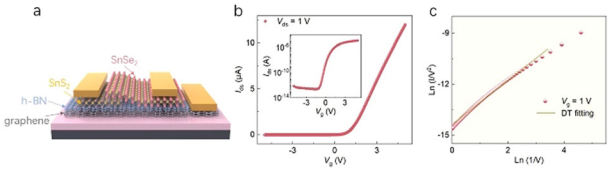
Straddling $SnSe_2/SnS_2$ van der Waals tunneling heterostructures for high performance broadband photodetectors

Xiangna Cong, Muhammad Najeeb Ullah Shah and Wenlong He*



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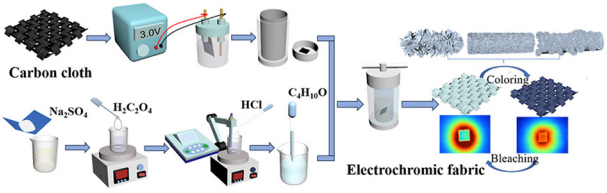
Preparation of WO_3-based flexible electrochromic fabrics and their near infrared shielding application

Mengjie Li, Wei Jiang, Yun Lin, Chengjie Huang, Panpan Hao, Wenwen Wang, Liyan Yang, Yuedan Wang* and Dong Wang*



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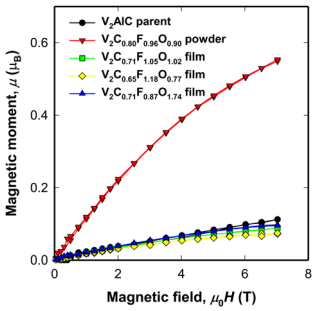

The preparation route and final form of V-MXenes override the effect of the O/F ratio on their magnetic properties

Pavla Eliášová,* Břetislav Šmíd, Jana Vejpravová, Shuo Li, Federico Brivio, Michal Mazur, Daniel N. Rainer, M. Infas H. Mohideen, Russell E. Morris and Petr Nachtigall

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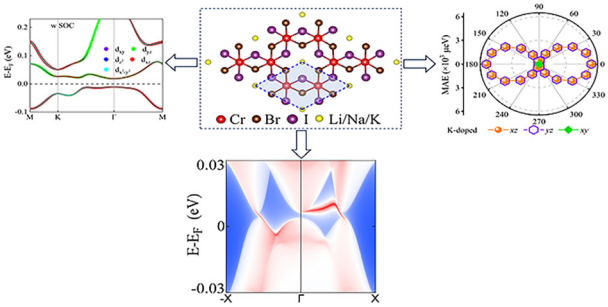

Alkali metal-doped two-dimensional Janus $Cr_2Br_3I_3$ monolayers with the quantum anomalous Hall effect

Xiang Yin, Li Deng, Yanzhao Wu, Junwei Tong, Feifei Luo, Fubo Tian and Xianmin Zhang*

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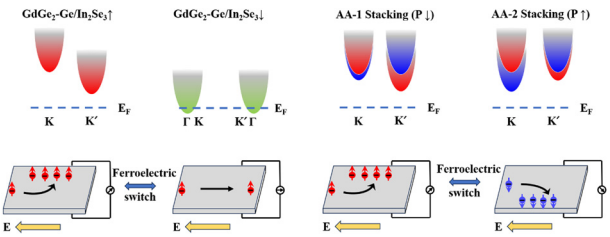

Reversible nonvolatile control of the anomalous valley Hall effect in two-dimensional multiferroic materials based on $GdGe_2$

Xuhong Li, Jiawei Li, Zhihao Gao, Ziyu Niu, Xinyue Bi, Jinwei Gao, Tengfei Cao and Xiaoli Fan*

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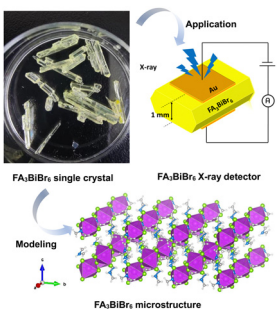

Suppression of ion migration in lead-free zero-dimensional perovskite FA_3BiBr_6 single crystals for X-ray detection

Kangyu Ji, Wenjun Wang,* Yuanbo Ma, Zihan Wang, Xuepeng Liu, Jiajiu Ye, Shu Zhang,* Xu Pan* and Songyuan Dai*

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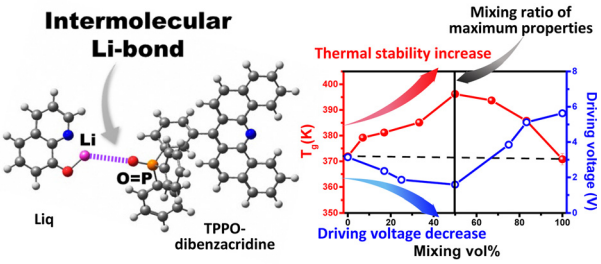
Intermolecular lithium bonding between different components upon mixing simultaneously enhances the thermal and electrical properties of an amorphous organic semiconductor material

Seon Bin Song, Myungsun Sim, Min Seok Ki, Taewoo Kim, You Kyoung Chung, Joonsuk Huh, Ohyun Kwon* and Keewook Paeng*



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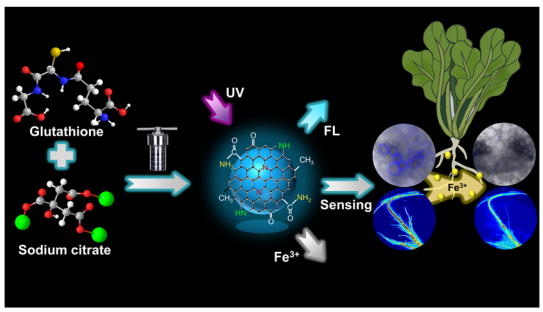
A fluorescence probe based on blue luminescent carbon dots for sensing Fe^{3+} in plants

Junjie Lin, Wanyi Huang, Haoran Zhang, Xuejie Zhang, Yingliang Liu, Wei Li* and Bingfu Lei*



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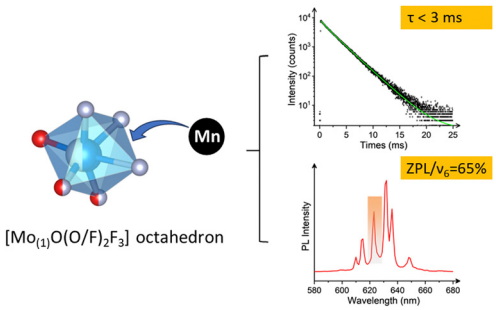
Non-equivalent Mn^{4+} doping in mixed-anion host of $K_3Na(MoO_2F_4)_2{\cdot}H_2O$ achieving short fluorescence lifetime and intense zero phonon line

Qiao Qu, Haiyan Zhang and Haipeng Ji*



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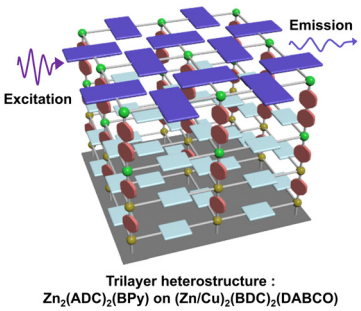
[001]-Oriented heteroepitaxy for fabricating emissive surface mounted metal–organic frameworks

Tonghan Zhao,* Narges Taghizade, Jan C. Fischer, Bryce S. Richards and Ian A. Howard*



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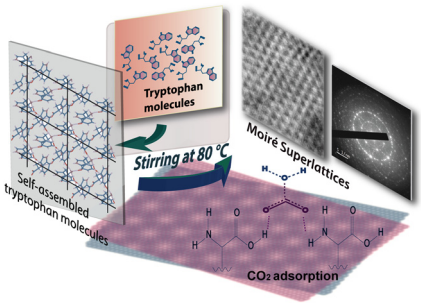

Two-dimensional molecular moiré superlattices of tryptophan with visible photoluminescence for photo-activatable CO_2 sensing and storage

Ujjala Dey and Arun Chattopadhyay*

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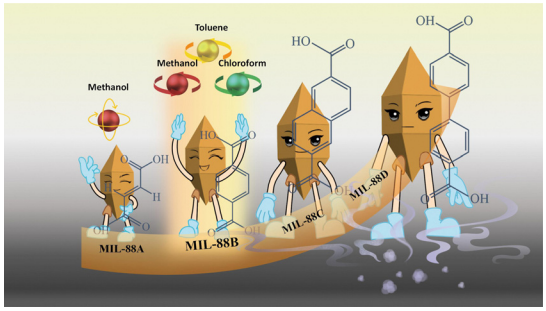

Soft actuators based on the flexible MOF MIL-88B(Fe) with a fast response to various organic solvent vapours

Shizhen Song, Tengfei Zheng, Bo Li, Hangcheng Yang, Qin-Xiang Jia,* Zhuting Hao, Wen Zhang and Ying Zhang

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A passivation strategy assisting a robust and low consumption power BP-based optical synaptic device for neural computing

Jiahao Zeng, Liping Ding,* Shuai Yuan, Zhe Feng, Liyan Dong, Weikang Shen, Pan Wang, Zuheng Wu and Guodong Wei

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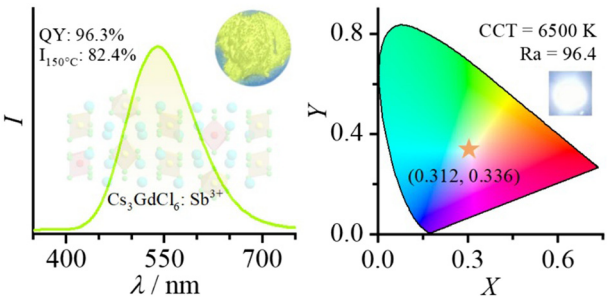

Sb^{3+}–doped 0D Cs_3GdCl_6 microcrystals with a near-unity photoluminescence quantum yield and high thermal quenching resistance for light-emitting application

Xiantian Liang, Wei Zhang, Yitong Shi, Wen Zhang, Hongyi Yang, Ping Huang, Lingyun Li, Qi Zhang, Wei Zheng* and Xueyuan Chen

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PAPERS

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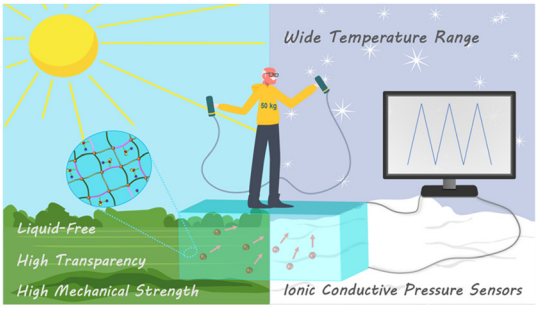
High ionic conductive, freezing-resistant and transparent polyurethane based on a novel metal ionic deep eutectic solvent

Menghao Du, Xu Zhu, Kaiyue Yang, Haoge Cheng, He Ma, Kaihu Zhang, Ning Ma, Yuyun Yang* and Xinyue Zhang*



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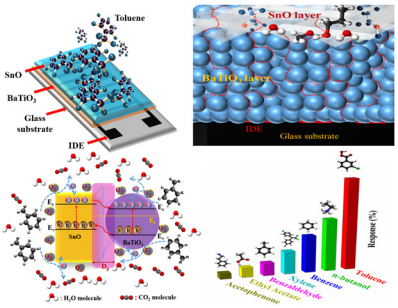
The heterostructure topology of a chemiresistive sensor based on hexagonal $BaTiO_3$ and 2D SnO for toluene detection

Anshika Singh,* Ravindra Kumar Rawat,* Atul Kumar and Pratima Chauhan*



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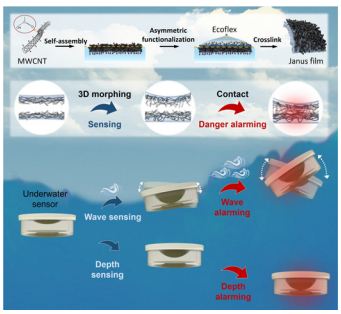
Structured carbon nanotube–elastomer nano-composites with a morphing–contact mechanism for an advanced underwater perception warning system

Feng Deng, Peng Xiao,* Wei Zhou, Qing Yang and Tao Chen*



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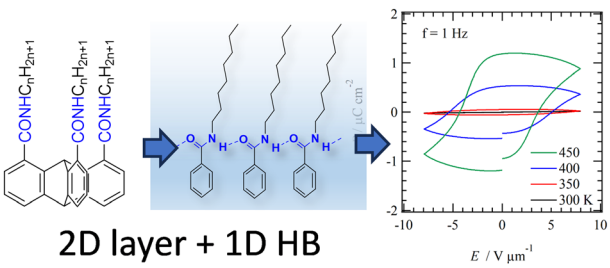
Ferroelectricity of alkylamide-substituted triptycene derivatives

Ryohei Mizoue, Takashi Takeda, Shun Dekura, Mikiya Kato, Tomoya Fukui, Yoshiaki Shoji, Takanori Fukushima, Saya Yamane, Yasutaka Suzuki, Jun Kawamata and Tomoyuki Akutagawa*



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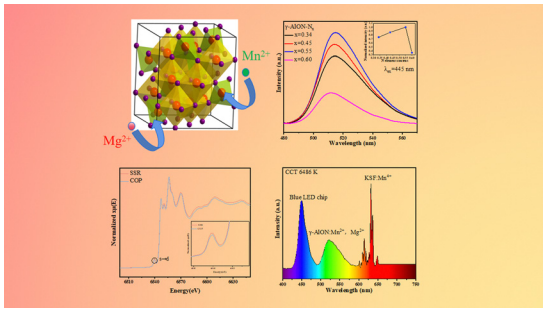

Synthesis of efficient submicron γ-AlON Mn^{2+}, Mg^{2+} phosphors for mini-LEDs by a coprecipitation precursor method

Zhezhe Su, Yuhua Wang* and Takatoshi Seto*

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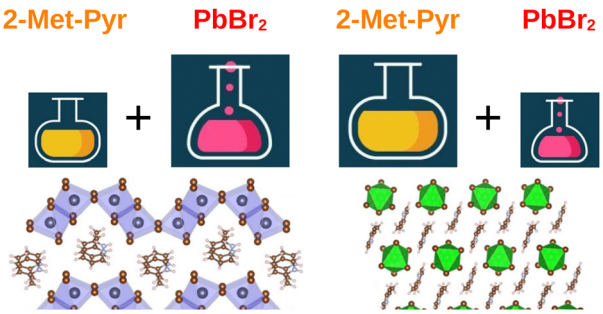

The effect of precursor concentrations on the structure and optoelectronic properties of quasi low-dimensional hybrid 2-methylpyridinium lead bromide crystalline phases

D. S. Shtarev,* D. A. Chaplygina, O. V. Patrusheva, C. Chen, A. V. Shtareva, C. C. Stoumpos, R. Kevorkyants and A. V. Emeline

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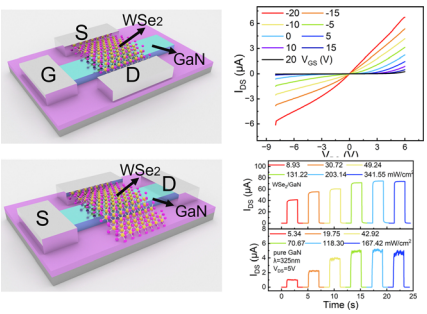

A dual-band photodetector based on a mixed-dimensional WSe_2/GaN junction

Shuting Chen, Hui Wang, Yuqing Yang, Shishi Liu, Lingyu Zhu, Xingfu Wang* and Nengjie Huo*

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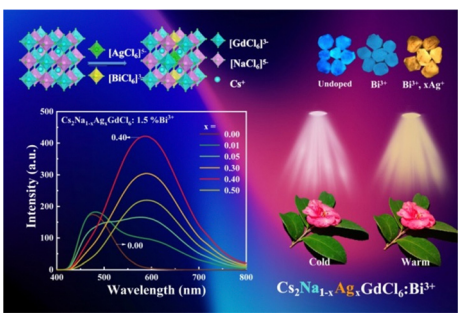

Alloying strategy for developing a single-band warm white emitting material $Cs_2NaGdCl_6$:Bi^{3+} *via* Ag^+ co-doping

Qianrong Jin, Jinrong Shi, Jianwei Jin, Wenli Xu, Suqin Chen and Yuexiao Pan*

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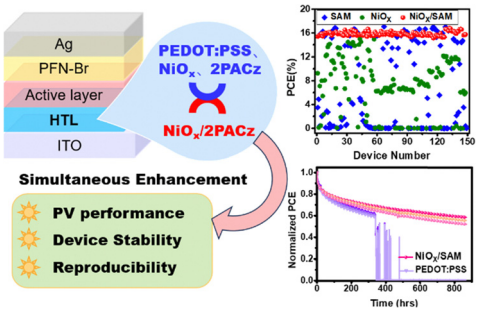
Functionalized nickel oxide as a hole transport layer for organic solar cells with simultaneous enhancement of efficiency and stability

Jingyang Xiao,* Minrun Ren, Guichuan Zhang, Yonggang Min and Hin-Lap Yip*



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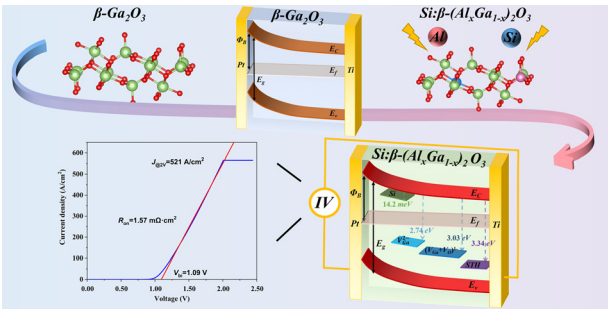
Bandgap engineering and Schottky barrier modulation of ultra-wide bandgap Si-doped β-$(Al_xGa_{1-x})_2O_3$ single crystals

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