

# Journal of Materials Chemistry C

Materials for optical, magnetic and electronic devices

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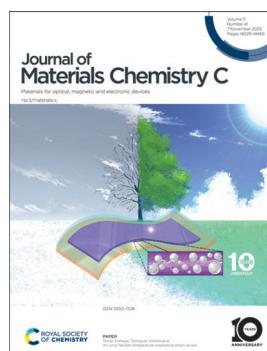
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ISSN 2050-7526 CODEN JMCCCX 11(41) 14029–14466 (2023)



### Cover

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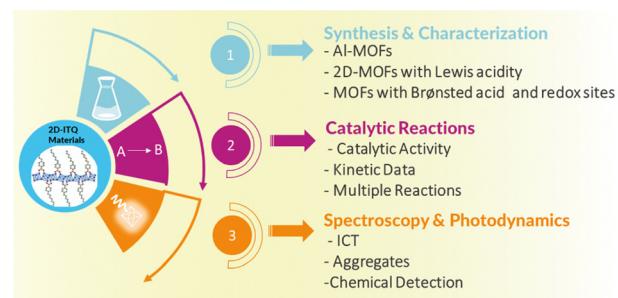
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## REVIEW

14043

### Synthesis, characterization & catalysis of ITQ 2D metal–organic frameworks and spectroscopic & photodynamic properties of their composites with organic dyes

Mario Gutiérrez, Urbano Díaz,\* Boiko Cohen\* and Abderrazzak Douhal\*



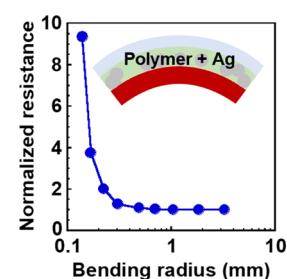
## PAPERS

14070

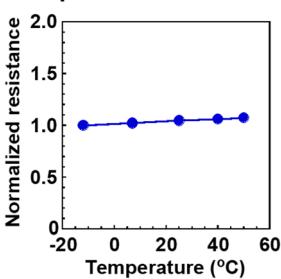
### An ultra-flexible temperature-insensitive strain sensor

Yu Kato, Kenjiro Fukuda, Takao Someya\* and Tomoyuki Yokota\*

### Flexible & strain-sensitive



### Temperature-insensitive



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# Journal of Materials Chemistry C

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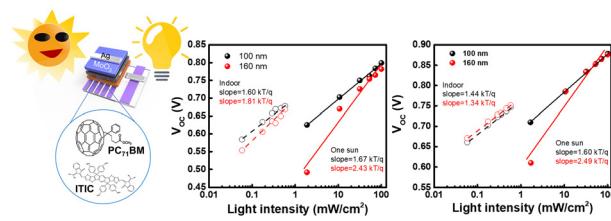


## PAPERS

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**Insights into the photovoltaic mechanism of organic photovoltaics under solar and artificial light**

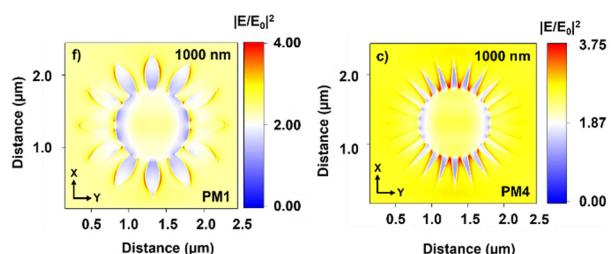
Yu-Ching Huang\* and Chia-Feng Li



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**The impact of dendrite morphology on the optical properties of sunflower mimic plasmonic metasurfaces**

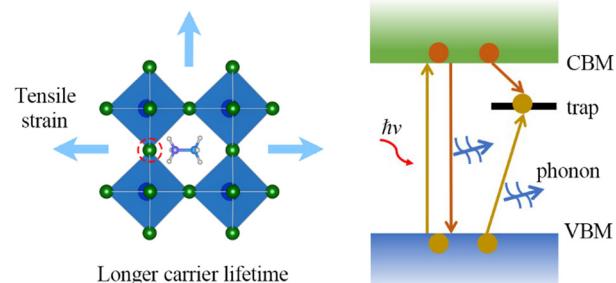
Sunil Mehla,\* Sivacarendran Balendhran and Suresh K. Bhargava\*



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**Beneficial effects of tensile strain on charge carrier lifetime in metal halide perovskites containing halogen vacancies**

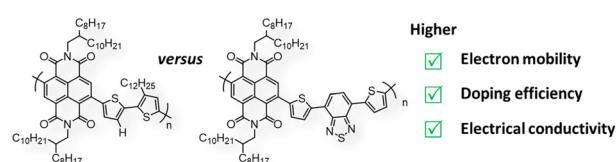
Zhiguo Wang, Pingzhi Zhang, Wei Wei\* and Wei Li\*



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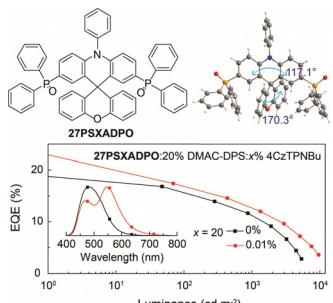
**Effect of a benzothiadiazole spacer on transport properties and N-doping of naphthalene-diimide-based copolymers**

Olivier Bardagot,\* Yann Kervella, Asma Aicha Medjahed, Stéphanie Pouget, Tamara Nunes Domischke, Alexandre Carella, Cyril Aumaître, Patrick Lévéque and Renaud Demadralle\*



## PAPERS

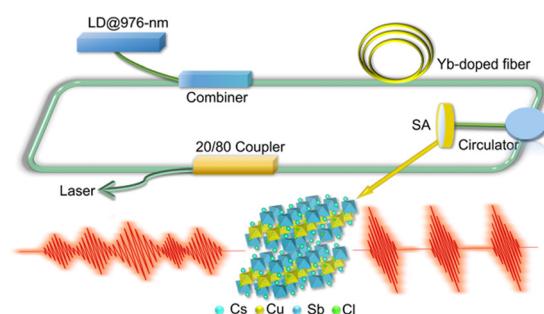
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**Phosphorylation amplified asymmetry of spiro[acridine-9,9'-xanthene] hosts for efficient blue and white thermal activated delay fluorescent diodes**

Anqi Zhu, Ying Li, Yi Man, Yudong Pang, Chunbo Duan, Chunmiao Han, Jing Zhang, Chenhui Cao, Ying Wei,\* Xinfeng Shui and Hui Xu\*

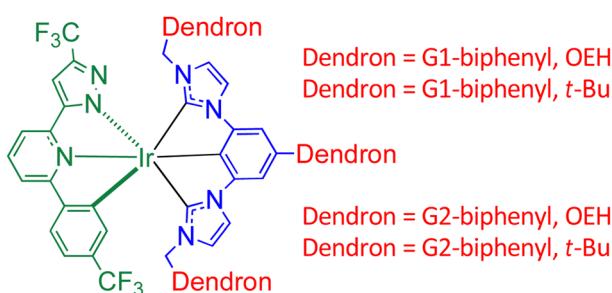
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**Lead-free double-perovskite  $\text{Cs}_4\text{CuSb}_2\text{Cl}_{12}$  as an efficient saturable absorber for Q-switched mode-locking fiber lasers**

Hui-Jie Zhang, Tao Song, Xin-Xing Liu, Ming-Zhu Chen, Bo Ma, Han-Zhi Huang, Xin-Ping Zhai, Qiang Wang,\* Yu-Long Tang\* and Hao-Li Zhang\*

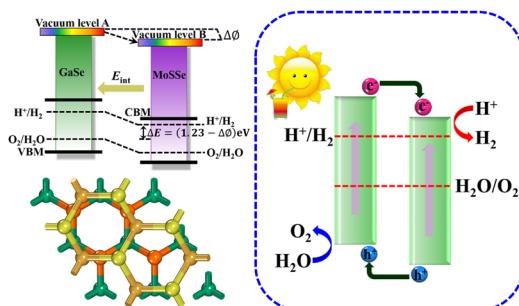
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**Effect of dendrimer generation and surface groups on the optoelectronic properties of green emitting bis-tridentate iridium(III) complexes designed for OLEDs**

Vaidehi Pandit, Junhyuk Jang, Manikandan Koodalingam, Chandana Sampath Kumara Ranasinghe, Mile Gao, Paul L. Burn\* and Emma V. Puttock

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**First principles calculations of the electronic configuration and photocatalytic performance of GaSe(Ga<sub>2</sub>SSe)/MoS<sub>2</sub>(MoSSe) heterojunctions**

Lingxia Li, Junjiang Ren, Junchen Li, Xin Guo, Maocheng Liu and Xuefeng Lu\*

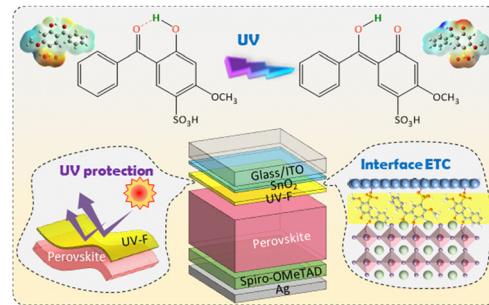


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**Building a UV filter and interfacial bridge with a multifunctional molecule for enhancing the performance and stability of  $\text{MAPbI}_3$  solar cells**

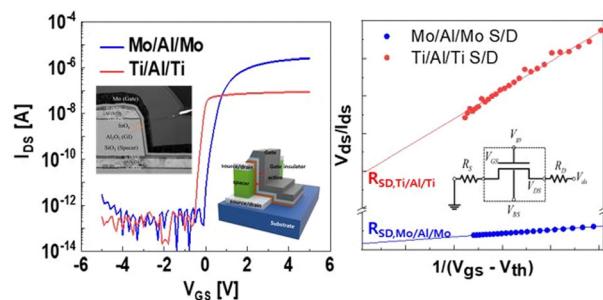
Chenyu Zhao, Yutao Li, Xinxuan Yang, Lin Fan, Maobin Wei, Huilian Liu, Xiaoyan Liu, Jinghai Yang,\* Fengyou Wang\* and Lili Yang\*



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**Contact properties of a low-resistance aluminum-based electrode with metal capping layers in vertical oxide thin-film transistors**

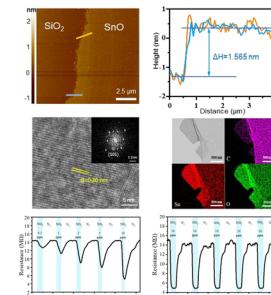
Sori Jeon, Kwang-Heum Lee, Seung-Hee Lee, Seong-In Cho, Chi-Sun Hwang, Jong Beom Ko\* and Sang-Hee Ko Park\*



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**Liquid-tin-printed two-dimensional  $\text{SnO}$  for optoelectronic  $\text{NO}_2$  gas sensing at room temperature**

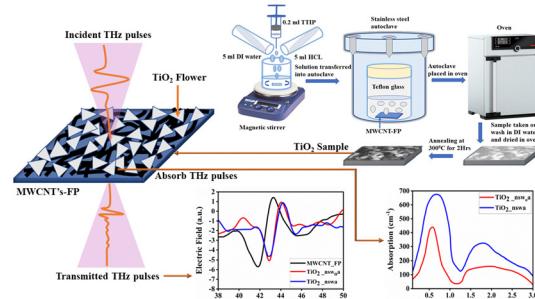
Yin Fen Cheng, Zhong Li,\* Min Zhang, Hua Guang Xie, Tao Tang, Yi Liang, Xuan Xing Wang, Kai Xu, Bao Yue Zhang, Azhar Ali Haidry and Jian Zhen Ou\*



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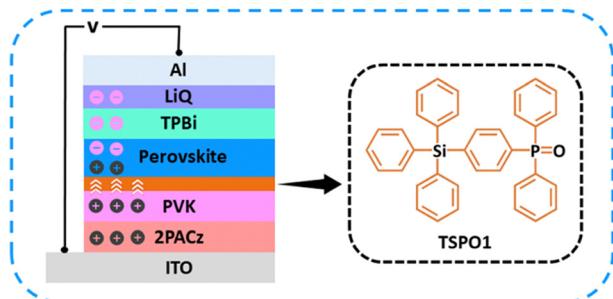
**High-performing  $\text{TiO}_2$  flower-like nanostructures based on flexible MWCNTs for dual-band terahertz absorption**

Guruvandra Singh, Subhash Nimanpure,\* Nityananda Acharyya, Shreya Rane, Dibakar Roychowdhury, Bhanu Pratap Singh, Jai S Tawale, Rina Sharma and Mukesh Jewariya\*



## PAPERS

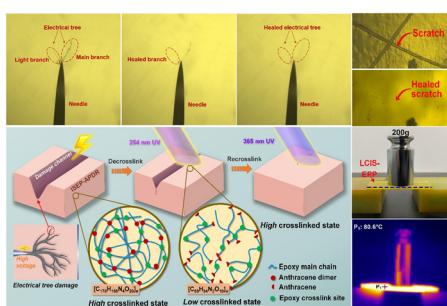
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### Effect of the hole transport layer on the performance of sky-blue Dion–Jacobson perovskite light-emitting diodes

Wen Ting Sun, Yanling He, Muhammad Umair Ali, Qiye Liu, Hongbo Mo, Sijia Wang, Alan Man Ching Ng and Aleksandra B. Djurišić\*

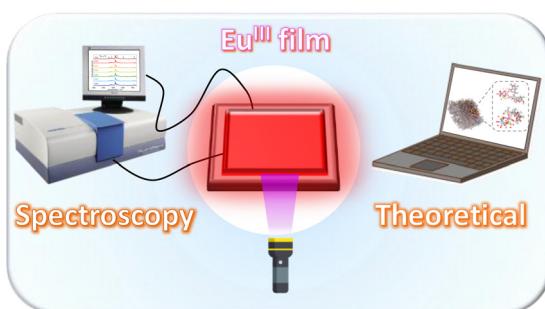
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### A UV-responsive mechanically robust insulating polymer that achieves intrinsic self-healing of electrical tree damage based on reversible anthracene photodimerization

Potao Sun, Zeyan Shi, Wenxia Sima,\* Xinyu Tang, Tao Yuan, Ming Yang, Hang Xu and Zhaoping Li

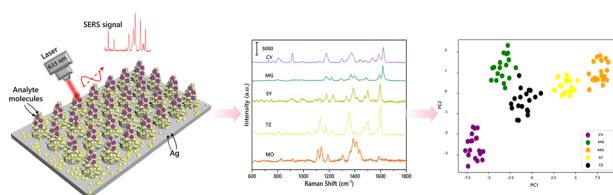
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### Unrevealing the opto-structural features of luminescent polymeric films containing Eu<sup>III</sup>-doped phosphors through spectroscopic and theoretical perspectives

Leonardo F. Saraiva, Airton G. Bispo-Jr, Sergio A. M. Lima and Ana M. Pires\*

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### A SERS sensor based on 3D nanocone forests capable of intelligent classification of aquatic product dyes

Yaqian Zhao, Ruoyang Huang, Xin Li, Xuanjiao Mao, Shaohang Xu, Na Zhou, Shaojuan Li,\* Haiyang Mao\* and Chengjun Huang

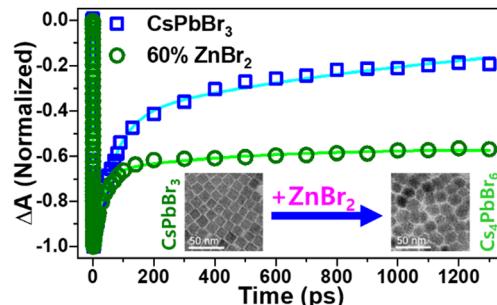


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**Compositional engineering of  $\text{ZnBr}_2$ -doped  $\text{CsPbBr}_3$  perovskite nanocrystals: insights into structure transformation, optical performance, and charge-carrier dynamics**

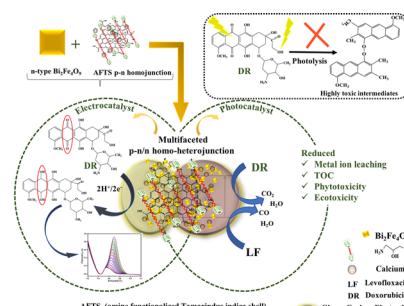
Naresh Varnakavi, Kiran Gupta, Kyunghoon Lee, Jiwon Yang, Pil-Ryung Cha\* and Nohyun Lee\*



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**A green catalyst and sensor: band engineering of  $\text{Bi}_2\text{Fe}_4\text{O}_9$ -based S-scheme p–n/n homo-heterojunction for detection and degradation of cytotoxic drug**

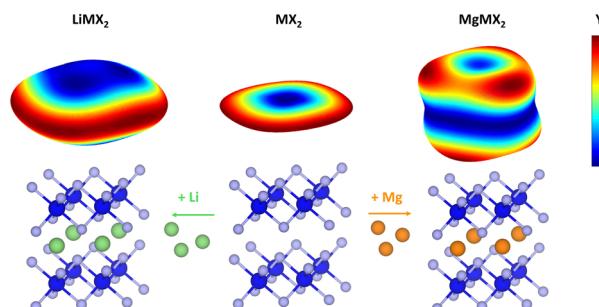
Deepeka, Jyoti, Paramdeep Kaur, Komal, Sandeep Bansal, Vinod Kumar, Kulbhushan Tikoo and Sonal Singhal\*



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**Intercalation-dependent elastic properties of transition metal dichalcogenides**

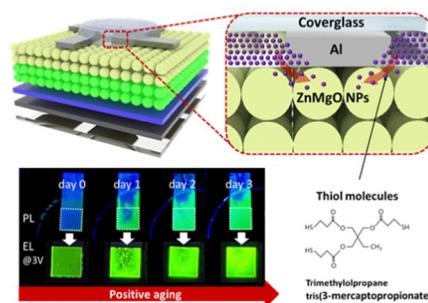
Conor Jason Price\* and Steven Paul Hepplestone\*



14292

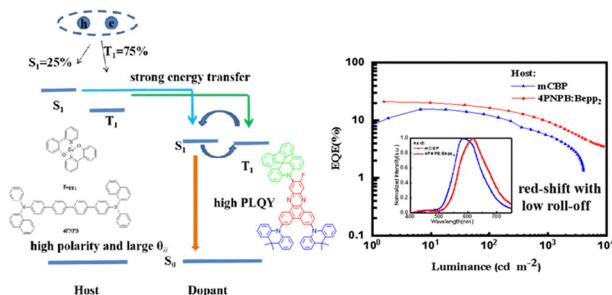
**Positive aging in InP-based QD-LEDs encapsulated with epoxy: the role of thiol molecules and post-annealing treatment**

Hyunwoo Jang, Seungki Shin, Minwoo Lee, Namyoung Gwak, Seongchan Kim, Yunseo Lee and Nuri Oh\*



## PAPERS

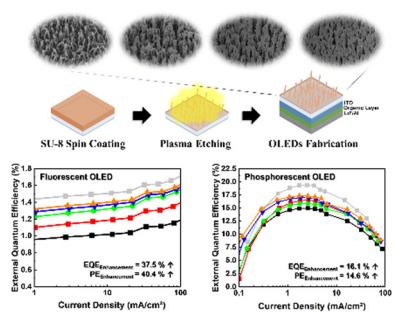
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**Optimizing the horizontal dipole orientation and dipole–dipole interaction of thermally activated delayed fluorescence emitters for high efficiency and low roll-off red OLEDs**

Jianwen Qin, Xianfeng Qiao, Dezhi Yang, Qian Sun, Yanfeng Dai, Xuhui Zhu and Dongge Ma\*

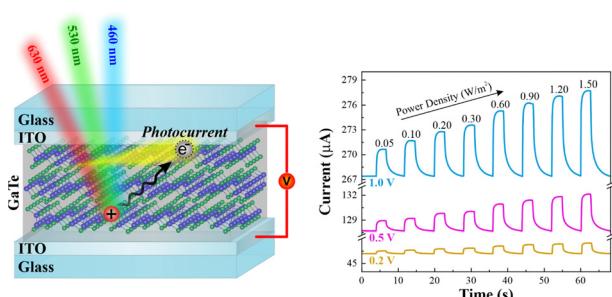
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**A morphological study of random nanostructured external light extraction layers for enhancing optical characteristics of OLEDs**

Geun Su Choi, Shin Woo Kang, Eun Jeong Bae, Byeong-Kwon Ju\* and Young Wook Park\*

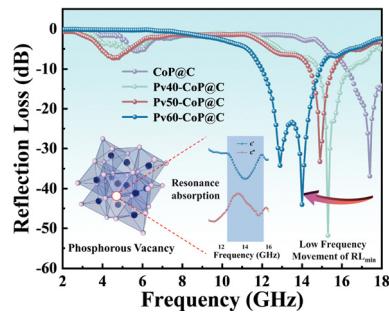
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**Efficient van der Waals layered gallium telluride-based passive photodetectors for low-power-density sensing of visible light**

Carlo C. Sta. Maria, Po-Hung Wu, Denny Pratama Hasibuan, Clara Sinta Saragih, Hien Giap, Duc Huy Nguyen, Yan-Ruei Chen, Ranjit A. Patil,\* Duy Van Pham, Ji-Lin Shen, Chien-Chih Lai, Maw-Kuen Wu and Yuan-Ron Ma\*

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**Resonance loss due to the polarization accumulation effect induced by phosphorus vacancies for enhancing electromagnetic wave absorption**

Shaoyao Tian, Zhihao Sun, Han Ding, Zihao Guo, Peng Wang, Yu Qiu, Benli Du and Lei Qian\*

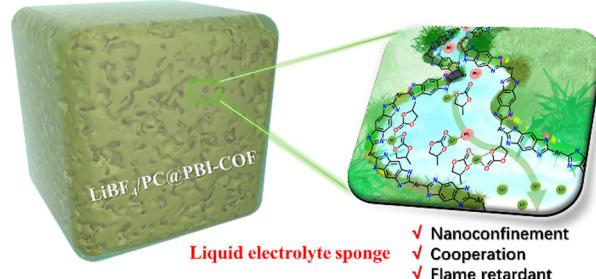


## PAPERS

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**A flame retardant benzimidazole-linked covalent organic framework as an organic solution sponge for acceleration of  $\text{Li}^+$ -ion migration in solid-state electrolytes**

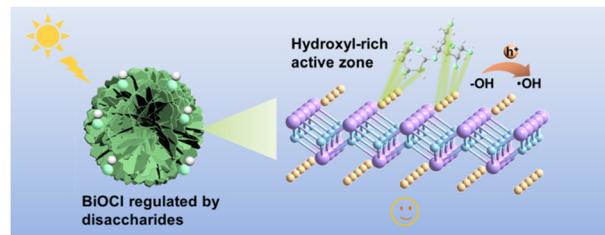
Han Zhang, Ya-Ru Kong, Jin Zhang,\* Xing-Yu Ren and Xiao-Ming Ren\*



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**BiOCl with a favorable surface state regulated by polyhydroxylated disaccharides for dramatically accelerated photodegradation capacity**

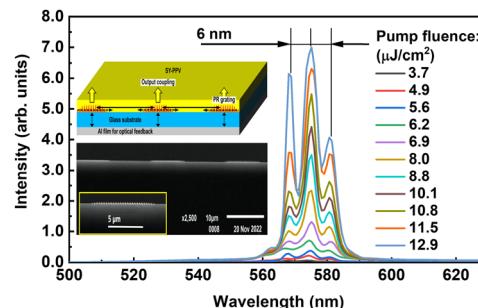
Jintao Wang, Yuan Liu, Zhichen Wang, Hao Mei, Rongbin Zhang\* and Xuewen Wang\*



14352

**Broad-band self-injection organic laser amplifier based on a DBR microcavity**

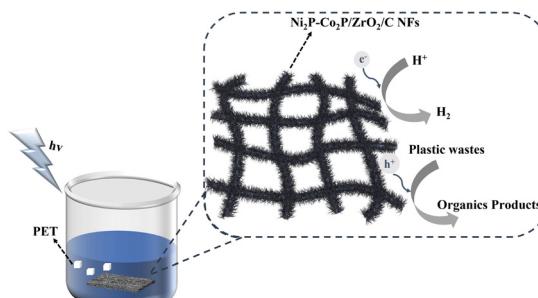
Tianqi Zhang, Wenwen Wu, Yue Liu and Xinping Zhang\*



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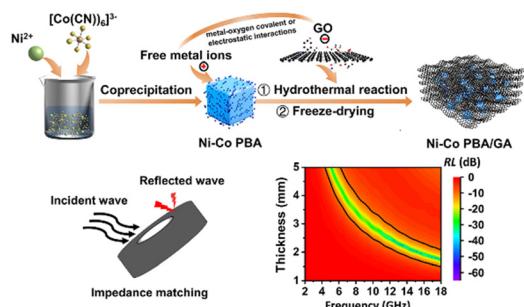
**An efficient and recyclable  $\text{Ni}_2\text{P}-\text{Co}_2\text{P}/\text{ZrO}_2/\text{C}$  nanofiber photocatalyst for the conversion of plastic waste into  $\text{H}_2$  and valuable chemicals**

Wenbin Qu, Xueyang Qi, Guixiang Peng, Minchao Wang, Lixin Song,\* Pingfan Du and Jie Xiong\*



## PAPERS

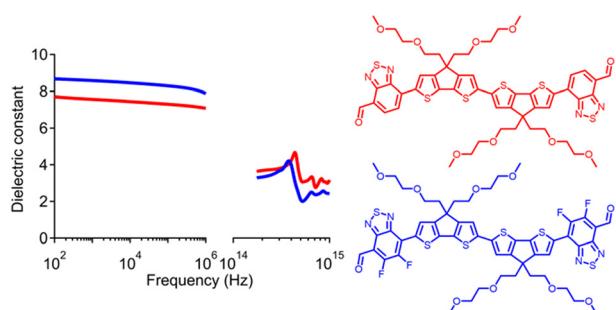
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**Ni–Co Prussian blue analogue/graphene aerogel: a green synthesis approach for high-performance electromagnetic wave absorption and radar stealth applications**

Wejie Liang, Ying Wang,\* Feng Gao,\* Shikun Hou, Qiong Wu, Hua Yang, Fei Jin, Gongxun Bai, Yahui Wang, Zhenbao Li and Hongliang Ge\*

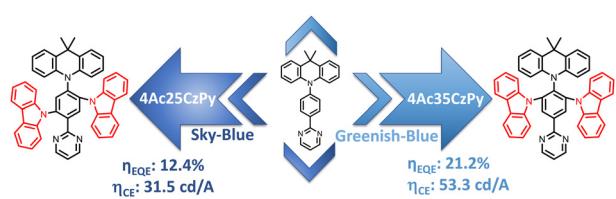
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**The effect of fluorination on the low and high frequency dielectric constants of non-polymeric organic semiconductors – towards homojunction solar cells**

Neil Mallo, Shaun McAnally, Ronan Chu, Mohammad Babazadeh, Hui Jin, Paul L. Burn,\* Ian R. Gentle and Paul E. Shaw\*

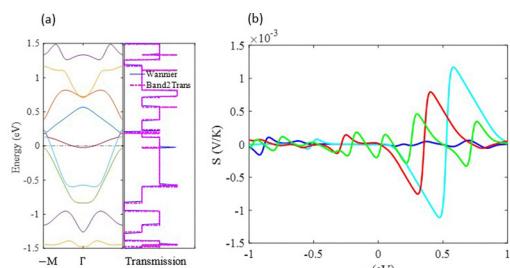
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**Modification of thermally activated delayed fluorescence emitters comprising acridan–pyrimidine moieties for efficient sky-blue to greenish-blue OLEDs**

Yi-Zhen Li, Hsuan-Chi Liang, Chia-Hsun Chen, Ching-Huang Chiu, Bo-Yen Lin,\* Jake A. Tan,\* Jiun-Haw Lee,\* Tien-Lung Chiu\* and Man-kit Leung\*

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(a) Proposing a new efficient method to obtain the transmission coefficient.  
(b) Obtaining a high value for the Seebeck coefficient.

**Tuning conducting phases in  $\text{C}_3\text{N}/\text{C}_2\text{N}$  heterostructures: applications in thermoelectrics**

M. Amir Bazrafshan, Farhad Khoeini\* and Catherine Stampfli

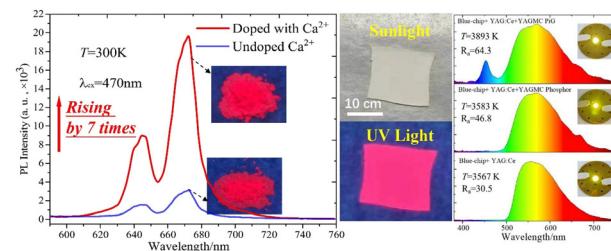


## PAPERS

14413

## High brightness and vibronic luminescent behavior of YAG:Mn<sup>4+</sup>/Ca<sup>2+</sup> red phosphor for preparing phosphor-in-glass in white LED

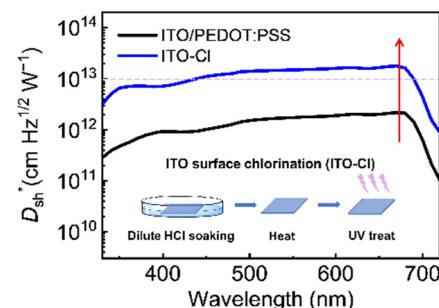
Chenyang Li, Fei Tang,\* Yang Xiao, Yimin Zhou, Bo Zhao and Shasha Lv



14421

## A Direct surface modification strategy of ITO anodes enables high-performance organic photodetectors

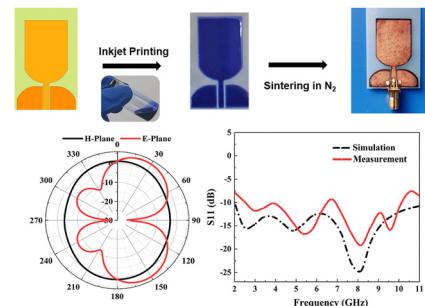
Jiahui Wang, Ruyan Zhao, Lu Zhang, Junhui Miao,\* Jun Liu\* and Lixiang Wang



14429

## Copper particle-free ink with enhanced performance for inkjet-printed flexible UWB antennas

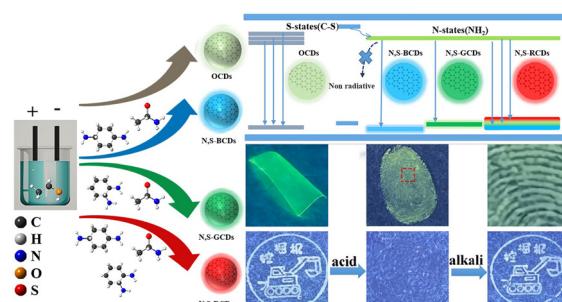
Wendong Yang,\* Zhichao Dong, Zihao Guo and Haoqiang Sun



14439

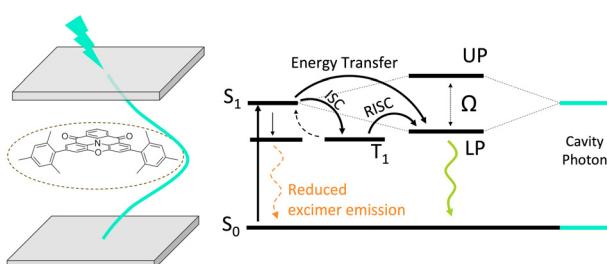
## Electrochemical synthesis of fluorescence-enhanced carbon dots with multicolor emission via surface nitrogen and sulfur modulation for information encryption applications

Qingling Zhao, Xiaotong Wang, Qinghong Song, Zehao Zang, Chunyan Fan, Lanlan Li, Xiaofei Yu, Zunming Lu and Xinghua Zhang\*



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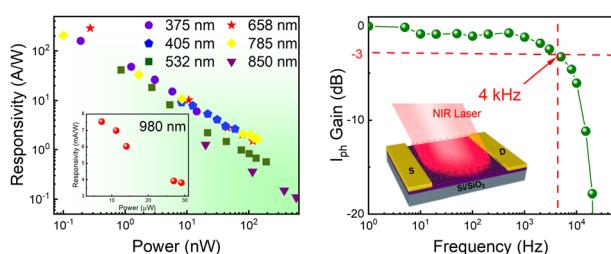
14448



**Multi-resonance TADF in optical cavities: suppressing excimer emission through efficient energy transfer to the lower polariton states**

Inseong Cho, William J. Kendrick, Alexandra N. Stuart, Pria Ramkissoon, Kenneth P. Ghiggino, Wallace W. H. Wong and Girish Lakhwani\*

14456



**Flexible near-infrared polarized photodetector based on CuPc single crystal grown by microspacing in-air sublimation**

Mengru Li, Qianqian Du,\* Yanxun Zhang, Yunlong Liu, Wenjun Wang, Fengqiu Wang\* and Shuchao Qin\*

## CORRECTION

14464

**Correction: Ternary alloyed  $\text{MoS}_{2-x}\text{Se}_x$  nanocomposites with a carrier mobility-dominated gas sensing mode: a superior room temperature gas sensing material for  $\text{NO}_2$  sensors**

Mingli Yin,\* Kexin Wang, Liaoquan Zhang, Chunxiao Gao, Juan Ren and Lingmin Yu