

Journal of Materials Chemistry C

Materials for optical, magnetic and electronic devices

rsc.li/materials-c

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

IN THIS ISSUE

ISSN 2050-7526 CODEN JMCCCX 12(6) 1911-2266 (2024)



Cover

See Yuichi Hirai, Rémi Métivier, Clémence Allain *et al.*, pp. 1952–1957.
Image reproduced by permission of Yuichi Hirai from *J. Mater. Chem. C*, 2024, 12, 1952.

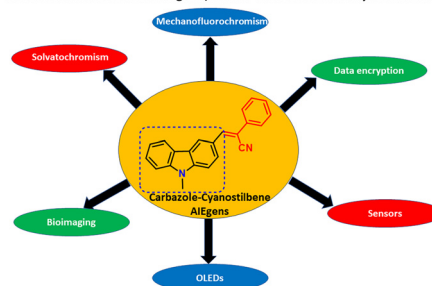
REVIEW

1923

Symphony of light: AIE and MFC in carbazole-based cyanostilbenes

A. Afrin and P. Chinna Ayya Swamy*

"Molecular Brilliance: Unveiling AIE/MFC in Carbazole-Based Cyanostilbenes"

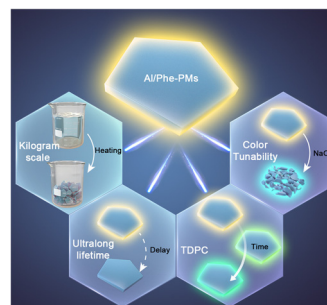


COMMUNICATION

1945

Achieving time-dependent and color-tunable ultralong room temperature phosphorescence through sodiation reconfiguration for dynamic 5D information encryption

Li Ya Liang, Ya Ting Gao, Shuai Chang, Jian Lv, Bin Bin Chen* and Da Wei Li*



EES Catalysis

GOLD
OPEN
ACCESS

Exceptional research on energy and environmental catalysis

Open to everyone. Impactful for all

rsc.li/EESCatalysis

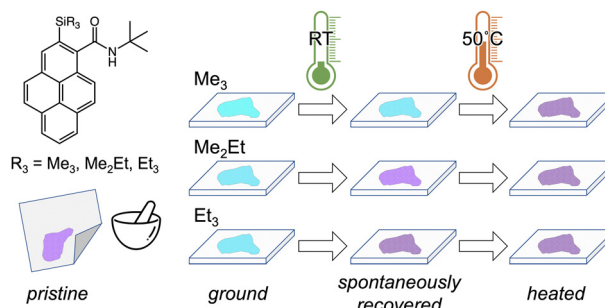
Fundamental questions
Elemental answers



1952

Mechanofluorochromism and self-recovery of alkylsilylpyrene-1-carboxamides

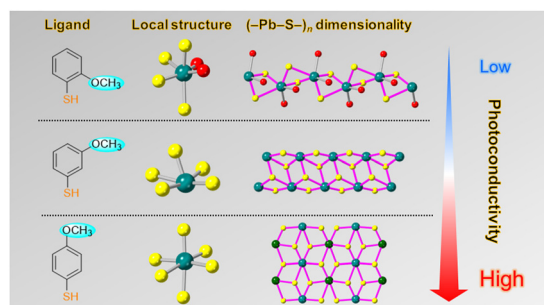
Yuichi Hirai,* Anna Wrona-Piotrowicz, Janusz Zakrzewski, Magdalena Ciechańska, Takahito Ohmura, Takashi Takeda, Takayuki Nakanishi, Rémi Métivier* and Clémence Allain*



1958

Impact of substituent position on crystal structure and photoconductivity in 1D and 2D lead(II) benzenethiolate coordination polymers

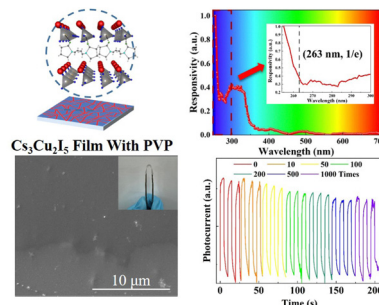
Ryohei Akiyoshi,* Akinori Saeki, Kazuyoshi Ogasawara and Daisuke Tanaka*



1965

Polymer-assisted crystal growth regulation and defect passivation for high-performance flexible solar-blind photodetectors based on copper-based halides

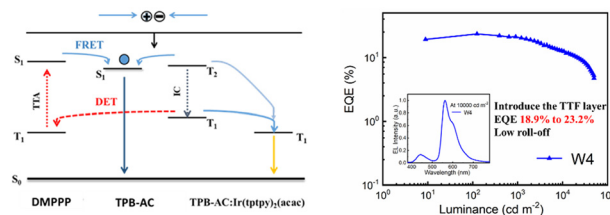
Chengjun Liu, Yuyi Zhang, Lixi Wang, Jianhua Chang, Qing Li, Xiaobing Zhang, Byung Seong Bae, Omolola Esther Fayemi, Xiaobao Xu, Jianguo Pan,* Jing Chen* and Wei Lei*



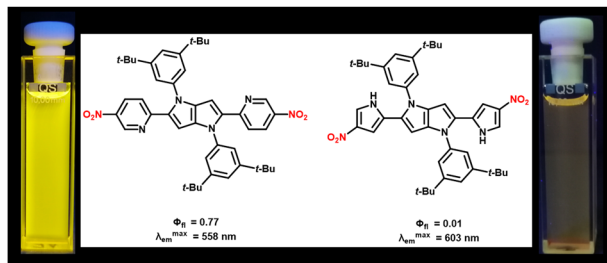
1972

High-efficiency and low-efficiency roll-off fluorescence/phosphorescence hybrid white organic light-emitting diodes based on AIEgens with hot exciton property by strategically managing triplet excitons

Guangjian Gao, Pengbo Han, Xianfeng Qiao, Yanfeng Dai, Qian Sun, Dezhi Yang, Anjun Qin,* Ben Zhong Tang and Dongge Ma*



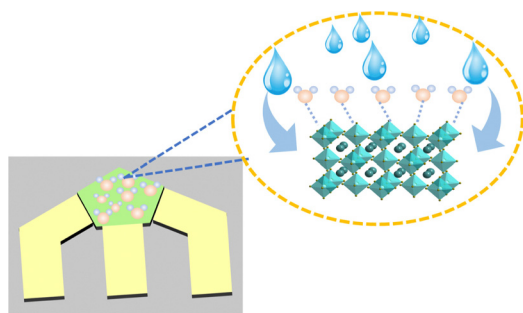
1980



The interplay of intersystem crossing and internal conversion in quadrupolar tetraarylpyrrolo-[3,2-*b*]pyrroles

Krzysztof Górski, Damian Kusy, Shuhei Ozaki, Marzena Banasiewicz, Rashid Valiev, Smruti Ranjan Sahoo, Kenji Kamada,* Glib Baryshnikov* and Daniel T. Gryko*

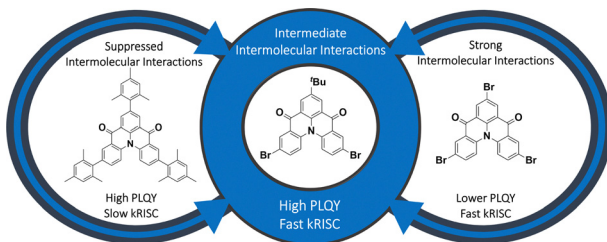
1988



Effects of halogen elements on a humidity sensor based on a thin film bulk acoustic wave resonator incorporated with $\text{Cs}_3\text{Bi}_2\text{X}_9$ ($\text{X} = \text{Cl}, \text{Br}, \text{I}$) perovskites

Lishuai Zhao, Peidong Ouyang, Xinyan Yi and Guoqiang Li*

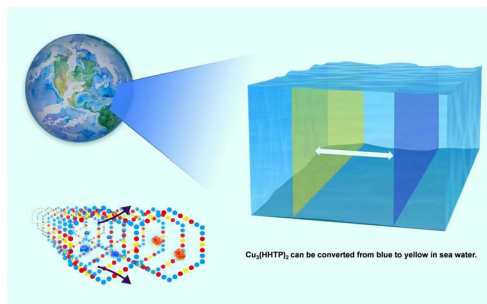
1996



Peripheral halogen atoms in multi-resonant thermally activated delayed fluorescence emitters: the role of heavy atoms in intermolecular interactions and spin orbit coupling

Hector Miranda-Salinas, Jingxiang Wang, Andrew Danos, Tomas Matulaitis, Kleitos Stavrou,* Andrew P. Monkman* and Eli Zysman-Colman*

2007



Electrochromic electrically conductive $\text{Cu}_3(\text{HHTP})_2$ films with adaptation to diverse and low-concentration water

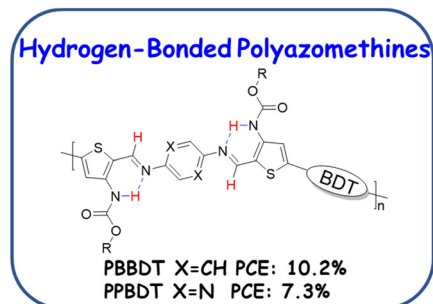
Yongsheng Liu, Xiaoyu Zhang, Ran Li, Ziqiu Lu, Xilu Wu, Chengyi Hou, Qinghong Zhang, Yaogang Li, Kerui Li* and Hongzhi Wang*



2016

Hydrogen-bonded polyazomethines for efficient organic solar cells

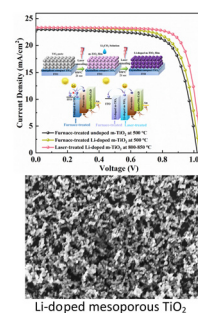
Bo Zhang, Yuanyuan Wang, Kaiwen Lin, Yinhua Zhou* and Qing Zhang*



2025

Laser processing of Li-doped mesoporous TiO₂ for ambient-processed mesoscopic perovskite solar cells

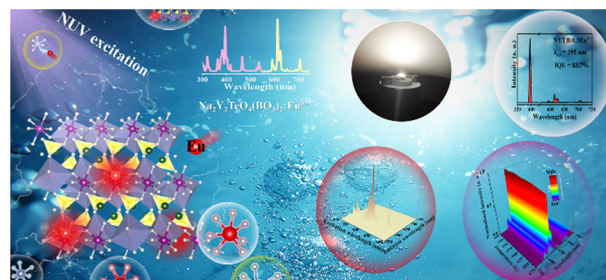
Hongbo Mo, Qian Chen,* Dong Wang, Wei Guo, Dongxu Cheng, Yang Sha, Muhamad Z. Mokhtar, Zhenyu Jia, Janet Jacobs, Andrew G. Thomas, Lin Li, Zhu Liu* and Richard J. Curry*



2037

Layered structure-induced quenching delay toward highly efficient and thermally stable red emission in Eu³⁺-activated borotellurate phosphors

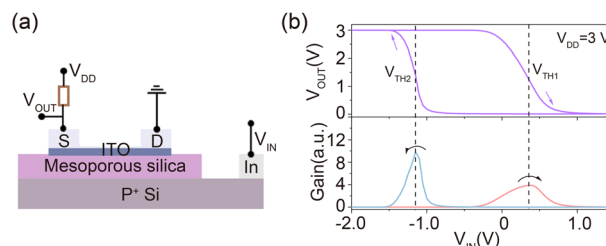
Yuefei Xiang, Hongzhi Zhang,* JunPeng Li, Hong Li, Tongsheng Yang, Canyuan Liao, Heyun Zhao and Jing Zhu*



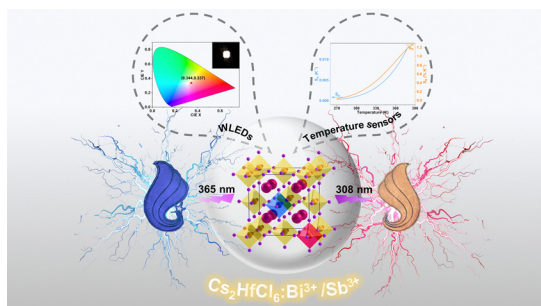
2048

A reverse Schmitt trigger with an adjustable hysteresis window implemented by mesoporous silica electrolyte-gated transistors

Linzi Liang, Kekang Liu, Zhiyuan Luo, Zhengdong Jiang, Qichang Hu and Yanghui Liu*



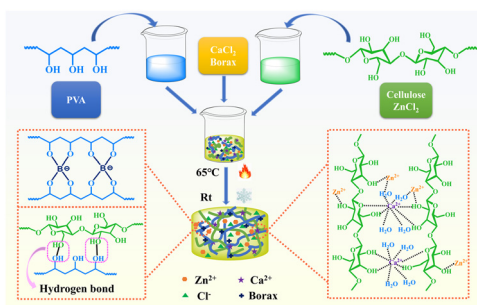
2053



Bi³⁺/Sb³⁺ co-doped Cs₂HfCl₆ vacancy-ordered double perovskites for multifunctional optoelectronic applications

Zixuan Huang, Jinju Zheng,* Hui Fu, Jialiang Jiang, Zilong Li, Chunhong Gu, Zhentao Du, Yang Yang, Weiyou Yang and Jialong Zhao*

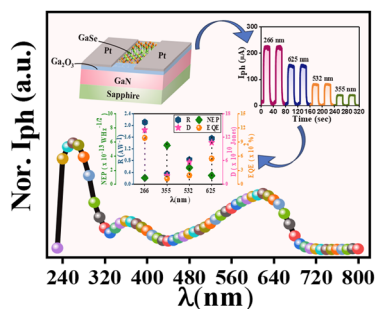
2063



Preparation of PVA/cellulose composite hydrogel electrolytes based on zinc chloride-dissolved cellulose for flexible solid-state capacitors

Ru Zhang, Chengfeng Wu,* Xuyan Liao, Axi Luo, Yidan Jing,* Ningya Yu, Shengpei Su, Xiaomin Zhang,* Jin Zhu and Guobo Deng

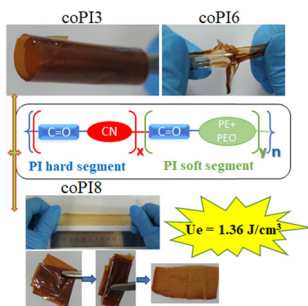
2073



A nanoflower-like GaSe/ β -Ga₂O₃ based heterostructure for highly efficient self-powered broadband photodetectors

Urvashi Varshney, Anuj Sharma, Aditya Yadav, Preeti Goswami and Govind Gupta*

2084



Tailoring the properties of semi-aromatic copolyimides through structural manipulation towards energy-storage applications

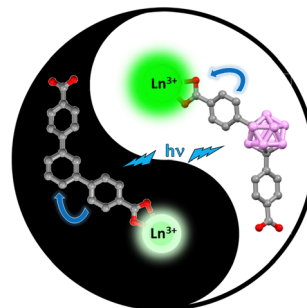
Irina Butnaru,* Adriana-Petronela Chiriac, Mihai Asandulesa, Codrin Tugui, Iuliana Stoica and Mariana-Dana Damaceanu



2101

Rationalizing the carborane *versus* phenyl-driven luminescence in related dicarboxylic ligands and their antenna effect for their Eu^{3+} and Tb^{3+} metal–organic frameworks: a combined experimental and computational study

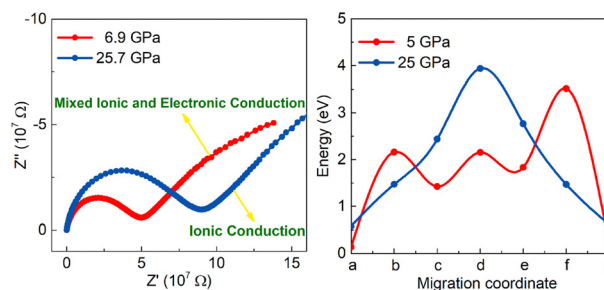
Zhen Li, Claudio Roscini, Rosario Núñez, Francesc Teixidor, Clara Viñas, Eliseo Ruiz* and José Giner Planas*



2110

Pressure effects on the ionic transport properties of LiNH_2

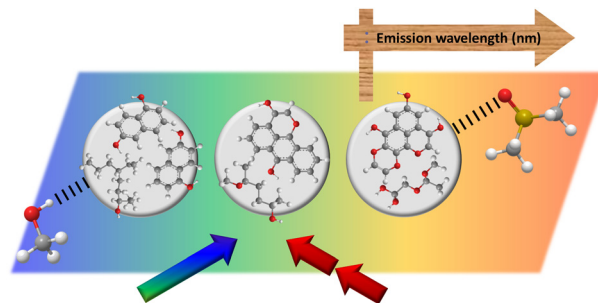
Jia Wang, Hao Liu, Li Wang, Min Cao, Xin Zhang, Chunxiao Gao and Yonghao Han*



2117

Revealing two chemical strategies to tune bright one- and two-photon excited fluorescence of carbon nanodots

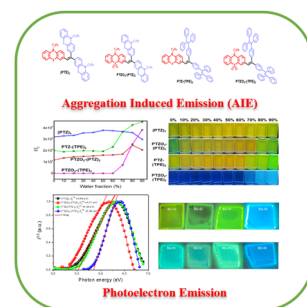
Sebastian G. Mucha, Lucyna Firlej, Filip Formalik, Jean-Louis Bantignies, Eric Anglaret, Marek Samoć and Katarzyna Matczyszyn*



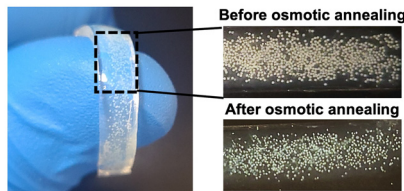
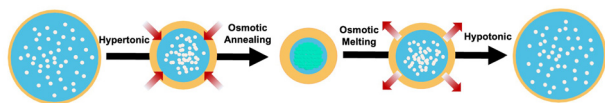
2134

Phenothiazine and phenothiazine sulfone derivatives: AIE, HTMs for doping free fluorescent and multiple-resonance TADF OLEDs

Ramakant Gavale, Melika Ghasemi, Faizal Khan, Dmytro Volyniuk, Juozas Vidas Grazulevicius and Rajneesh Misra*



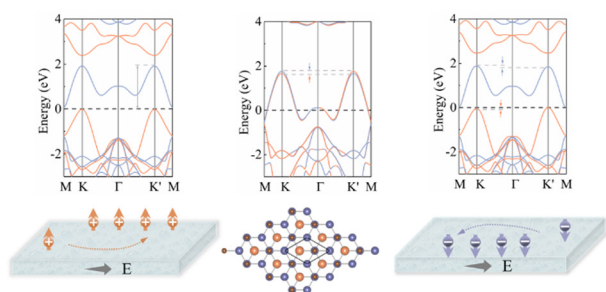
2148



Adaptive coloration enabled by the reversible osmotic annealing of chromatophore-like microcapsules

Jae-Hyun Kim, Ji-Young Lee, Jaekyoung Kim, Zhe Gong, Daniel J. Wilson, Leila F. Deravi* and Daeyeon Lee*

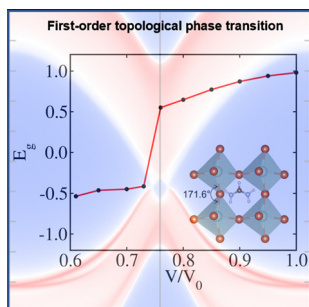
2156



Controllable dual-polarization valley physics in the strain-engineered 2D monolayer of VC₂N₄

Chengan Lei, Shiyu Cao, Zelong Gong, Xinru Li, Yandong Ma, Jian Gao, Jianqiang Bi, Rajeev Ahuja and Zhao Qian*

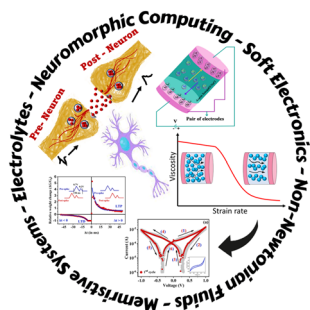
2165



Strain-driven topological quantum phase transition in (pseudo)cubic (mixed)-Cs/MA/FA halide perovskites

Ankita Phutela,* Sajjan Sheoran, Deepika Gill and Saswata Bhattacharya*

2173



Unlocking the resistive switching in Acacia Senegal-based electrolyte for neuromorphic computation

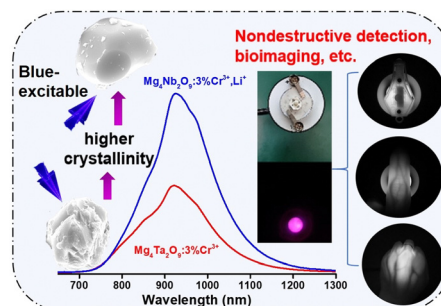
Aziz Lokhandwala, Parth Thakkar, Jeny Gosai, Suvik Oza and Ankur Solanki*



2184

Broadband short-wave infrared $\text{Mg}_4\text{Nb}_2\text{O}_9\text{:Cr}^{3+},\text{Li}^+$ phosphor for nondestructive safety detection and biomedical imaging

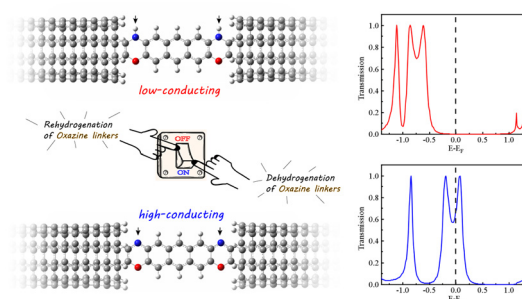
Qingyang Ding, Jincheng Wu, Dechao Yu,* Xinxin Han, Yayun Zhou, Tiantian Shen, Yunfeng Ma,* Songlin Zhuang and Dawei Zhang



2194

Oxazine: an anchoring group serving as functional kernels to construct single-molecule switches

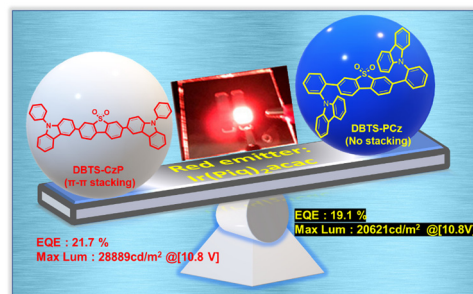
Shi Li, Yuxuan Jiang, Yudi Wang, Dongying Lin, Haoyang Pan, Yongfeng Wang, Stefano Sanvito and Shimin Hou*



2203

Perceiving the influence of phenyl-carbazole isomers on sulfone/thioxanthone-based D–A–D hosts: realizing efficient red-phosphorescent OLEDs

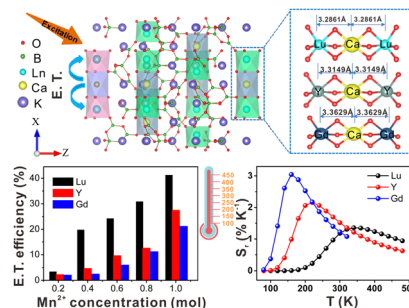
Premkumar Gnanasekaran, Yi-Ting Chen, Yun-Tzu Tseng, Kuan-Yu Su, Yu-Ting Lin, Tsz Chung Yiu, Chih-Hao Chang* and Yuan Jay Chang*



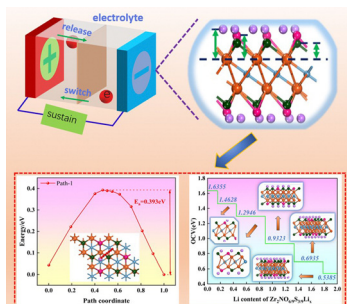
2216

Realizing a broad-scope and high-sensitivity optical thermometer based on dual-emission centers with structure confinement effect-related energy transfer

Shixiang Huang, Liuhan Yi, Feng Zhang,* Xiansheng Liu, Chao Li, Mengzhu Long and Yuhua Wang



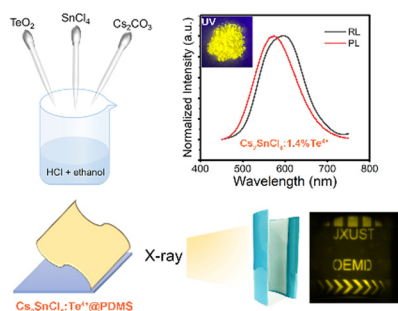
2227



First-principles study of the effect of O and S functional groups on the lithium storage properties of Zr_2N materials

Xuefeng Lu, Jupeng Qi, Junqiang Ren, Junchen Li, Hongtao Xue, Fuling Tang and Xin Guo*

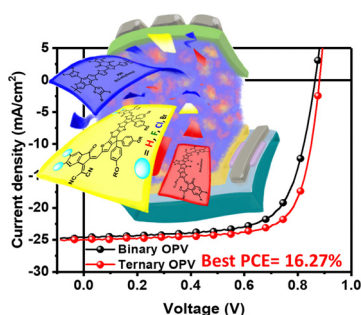
2241



Te^{4+} -doped Cs_2SnCl_6 scintillator for flexible and efficient X-ray imaging screens

Mengyao Wang, Xiaofei Qing, Tianyun Du, Chuanli Wu and Xiuxun Han*

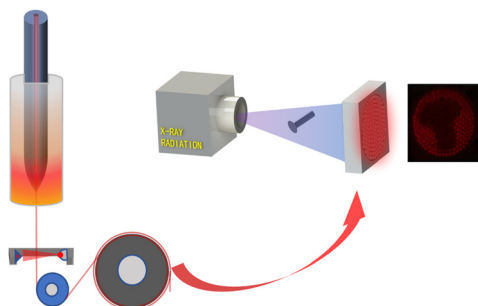
2247



Dicyclopentadithienothiophene-based non-fullerene acceptors for ternary blend organic photovoltaics

Shakil N. Afraj, Bing-Huang Jiang, Yu-Wei Su, Chien-Hung Yang, Hui-Shan Shih, Arulmozhi Velusamy, Jen-Shyang Ni, Yamuna Ezhumalai, Ting-Yu Su, Cheng-Liang Liu, Shuhelin Yau, Chih-Ping Chen* and Ming-Chou Chen*

2258



Plastic scintillation fiber with europium complexes for low-dose X-ray detection and long-distance imaging

Gang Ren, Zhouyuanhang Wang, Yan Kuai, Zhigang Cao, Feng Xu, Yu Liu, Kang Xie, Siqi Li,* Benli Yu and Zhijia Hu*

