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Materials for optical, magnetic and electronic devices

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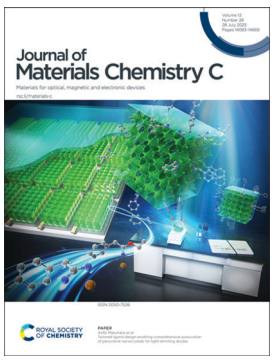

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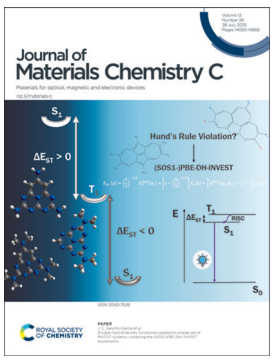

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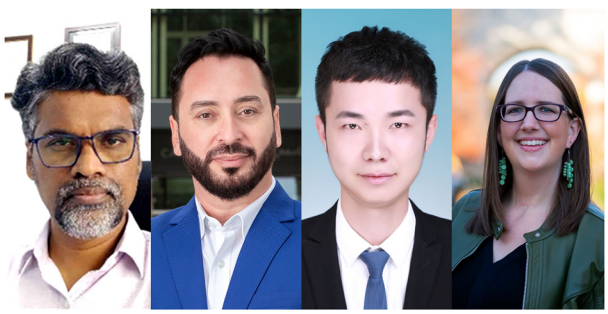
EDITORIAL

14098

Molecular crystals: mechanics and photonics

Rajadurai Chandrasekar,* Panče Naumov,* Xue-Dong Wang* and Kristin M. Hutchins*



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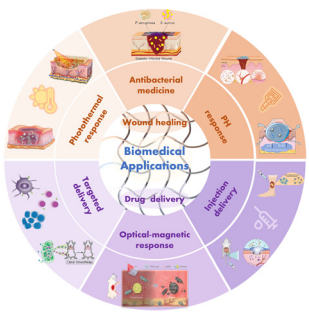
Intelligent responsive polymeric hydrogels: unlocking a new code for precision medicine in clinical practice

Haixiang Zeng, Yujia Han, Hongxia Li, Xiaohui Niu, Li Chen, Deyi Zhang and Kunjie Wang*



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REVIEWS

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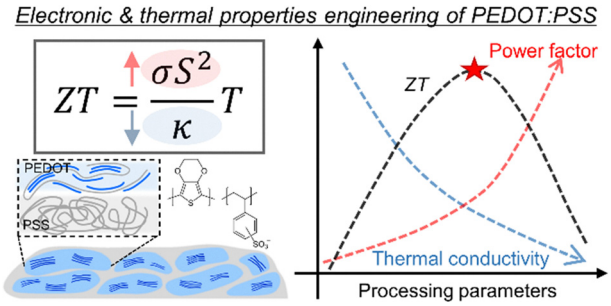
Recent advances in engineering electronic and thermal properties of PEDOT:PSS for efficient thermoelectric energy conversion

Jeong Han Song, Jeehyun Jeong, YouBin Choi, Sunwoo Cho, Ichiro Imae* and Jeonghun Kwak*



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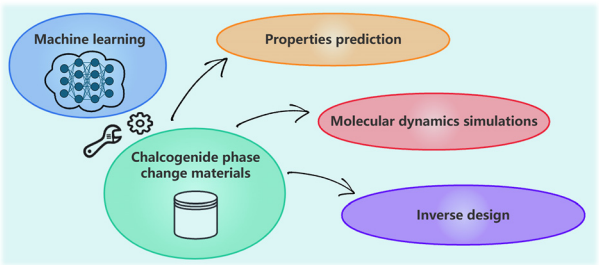
Chalcogenide phase-change materials: unveiling new horizons with big data and machine learning

Xuanguang Zhang, Kaiqi Li, Jian Zhou and Zhimei Sun*



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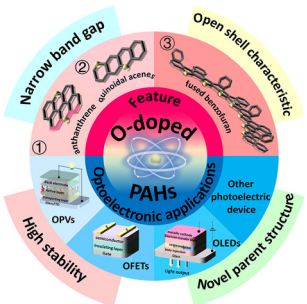
Recent advances in the O-doped polycyclic aromatic hydrocarbons

Yangguang Xiang, Tong Zou, Kun Yang, Jinling Li,* Ya Zou* and Zebing Zeng*



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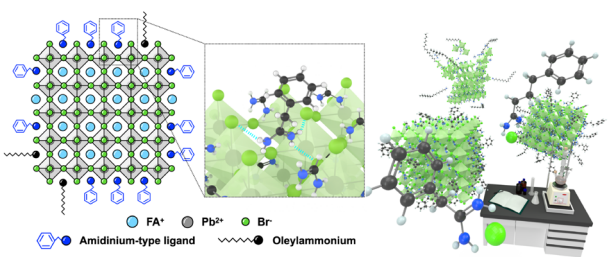
Tailored ligand design enabling comprehensive passivation of perovskite nanocrystals for light-emitting diodes

Taisei Kimura, Kenshin Yoshida, Kohei Narazaki, Kento Yanagihashi, Shun Hirashima, Yua Oyama, Khadga S. Thakuri, Yuta Ito, Satoshi Asakura, Motofumi Kashiwagi, Matthew S. White, Takayuki Chiba and Akito Masuhara*



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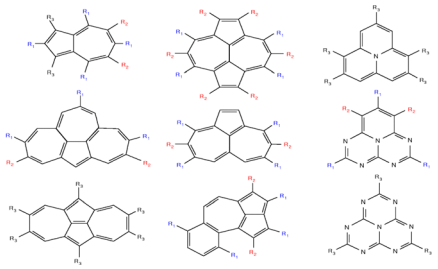

Double-hybrid density functionals applied to a large set of INVEST systems: validating the (SOS1-)PBE-DH-INVEST expressions

P. Maiz-Pastor, A. J. Pérez-Jiménez and J. C. Sancho-García*

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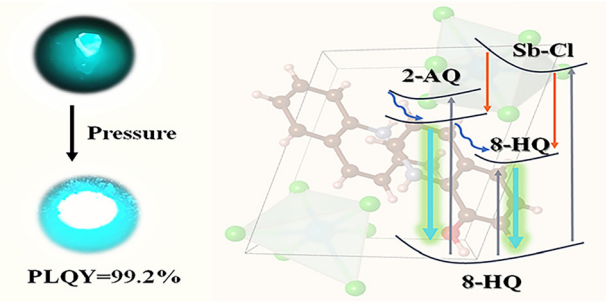

Inner structure and outer pressure synergistically trigger highly efficient luminescence in antimony-based perovskites

Xiaoming Zhang, Bihao Zhuang, Qinglin Meng, Ziqiao Wu, Zhiyan Yi, Panheng Wang, Jiayi Li, Jiandong Fan* and Wenzhe Li*

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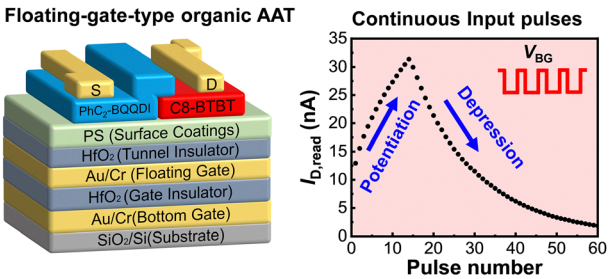

Reconfigurable artificial synapses with an organic antiambipolar transistor for brain-inspired computing

Ryoma Hayakawa,* Yuho Yamamoto, Kosuke Yoshikawa, Yoichi Yamada and Yutaka Wakayama*

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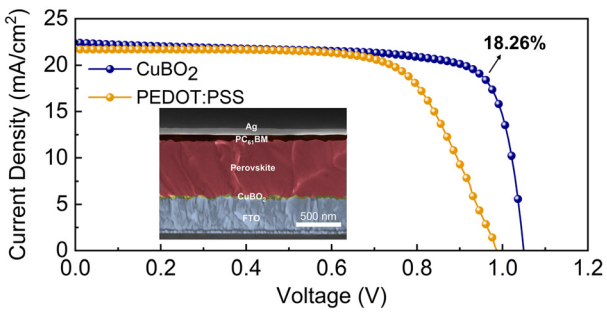

Solution-processed $CuBO_2$ hole transport layers for stable p–i–n perovskite solar cells

Shichao Wang, Jiangshan Shi, Jianhui Li, Yuanqiang Wang, Jingxia Yang and Yichuan Rui*

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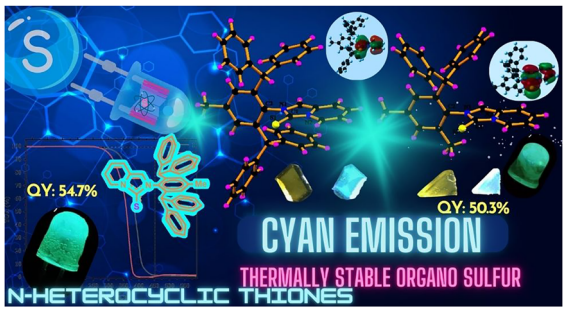
Modulation of luminescent behaviour in N-heterocyclic thiones

Joginder Singh, Gopendra Muduli, Sabari Veerapathiran, Arushi Rawat, Muneshwar Nandeshwar, Abhilash Sahu, Kohsuke Matsumoto, Osamu Tsutumi and Ganesan Prabusankar*



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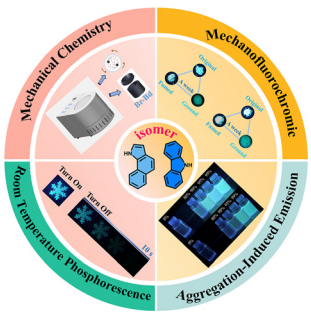
Mechanochemical synthesis of a carbazole isomer phosphor with mechanofluorochromic and AIE properties

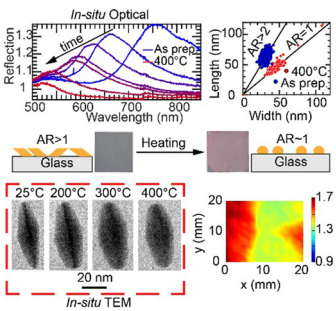
Xinyue Xu, Dong Ding, Jianan Niu, Bifang Liu, Feng Li,* Aziz Saparbaev, Erkin Zakhidov, Liangmin Yu and Mingliang Sun*



14270

Thermally driven resonance tuning in nanobipyramid plasmonic substrates

Arka Jyoti Roy, Sai Rama Krishna Malladi and Shourya Dutta-Gupta*



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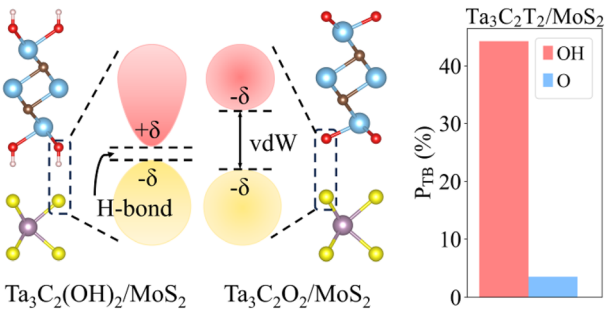
Hydrogen-bonded MXene ohmic contacts: overcoming Schottky and tunneling barriers for quantum-limit 2D MoS_2 electronics

Weishu Chen, Tao Shen, Ji-Chang Ren* and Shuang Li*



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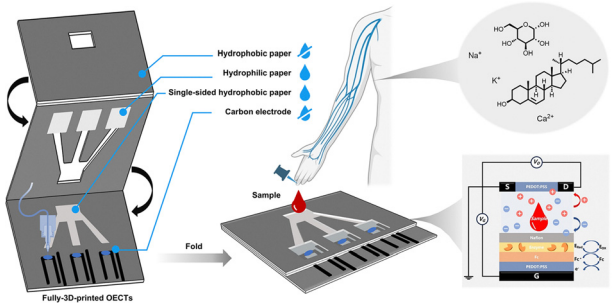

3D-printed organic electrochemical transistors on microfluidic paper for multianalyte point-of-care testing

Yanchen Qiu, Qi Zhang, Ruizhe Wang, Weichu Chen, Xiang Li, Yuwen Zhu,* Meifang Zhu, Gang Wang* and Hengda Sun*

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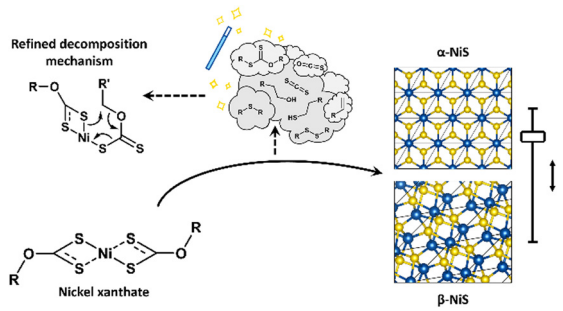

Insights into the thermal decomposition and conversion mechanism of nickel xanthates to nickel sulfides

Melissa Sophie Egger, Marco Sigl, Robert Saf, Heinz Amenitsch, Ana Torvisco, Thomas Rath* and Gregor Trimmel*

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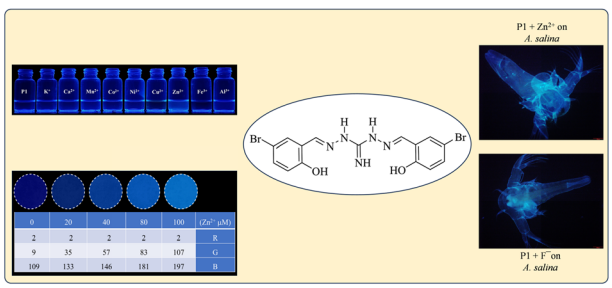

Guanidine-based dual-responsive 'turn on' fluorometric probes for the selective detection of Zn^{2+} cations and F^- anions: spectral and theoretical investigations, smartphone assisted colorimetric detection, and applications in bio-imaging of the *Artemia salina* animal model and molecular logic gate operation

Abbas Khaja Raees Ahmed, Ramalingam Gajendhiran, Anbazhagan Sathiyaseelan, Lina Zhang, Myeong-Hyeon Wang,* Rajakkani Paulpandiyan and Aziz Kalilur Rahiman*

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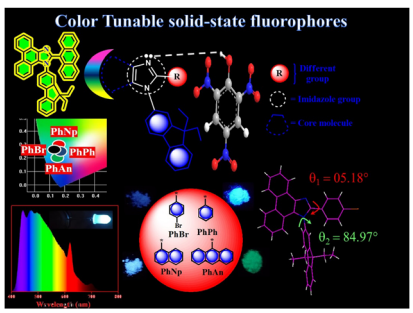

Broad-band emissive phenanthroimidazole-based donor–acceptor luminogens for hybrid white light emitting diodes and sensors for picric acid detection

Swetha Maredi, Sandhya Rani Nayak, Md Intekhab Alam, Diksha Thakur and Sivakumar Vaidyanathan*

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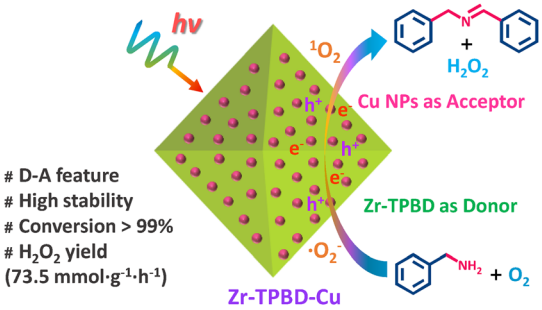
Incorporating electron-deficient Cu nanoparticles in photoactive Zr-MOFs for highly efficient amine oxidative coupling with H_2O_2 photosynthesis

Leixin Hou,* Ziyan Li, Congfa Bian, Mi Zhang, Daofu Liu, Mai Xu and Huilin Huang*



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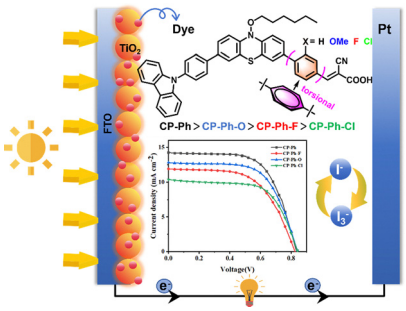
Carbazole–phenothiazine-based organic sensitizers *via* π-bridge functionalization with different electronegative/steric substituents: photophysical properties and DSSC performance

Wenjuan Xu, Xingyi Hu, Jiaxuan Yuan, Shuo Fu, Ying Guang, Baoxiu Mi,* Zhiqiang Gao* and Tingchun Ma*



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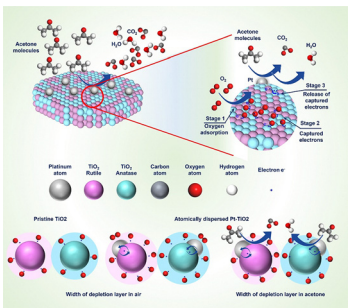
MOF-derived TiO_2 nano-disks decorated with Pt nanoparticles for enhanced acetone sensing

Azhar Ali Haidry,* Yucheng Wang,* Qawareer Fatima, Yanling Weng, Fazal Ghani, Wan Izhan Nawawi Wan Ismail and Kareem Yusuf



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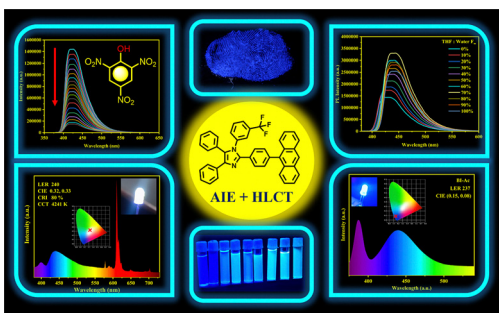
HLCT-AIE active deep blue fluorophores and their versatile applications: a multifunctional approach for advanced white LED materials, picric acid sensing and fingerprint visualization

Bhabana Priyadarshini Debata, Jagannath Dash, Sabita Patel* and Sivakumar Vaidyanathan*



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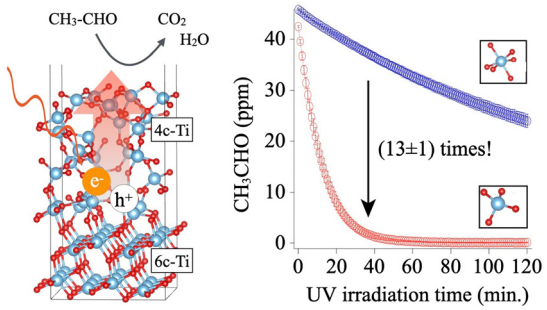

Ultra-thin layer of oxygen vacant amorphous titania for enhanced photocatalysis

Mitsuhiro Honda,* Motoyasu Kato, Tsuyoshi Ochiai and Tomoyuki Tamura

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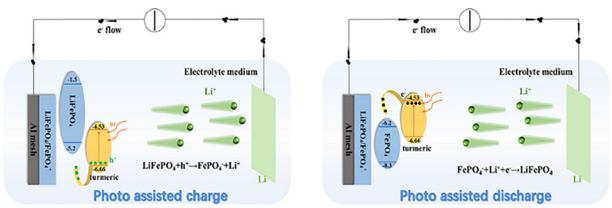

Enhanced photo-assisted lithium-ion batteries using natural dye-impregnated $LiFePO_4$ cathodes

Can Cui, Beili Pang,* Song Xu, Jianguang Feng, Hongzhou Dong, Mingwei Shang,* Liyan Yu* and Lifeng Dong*

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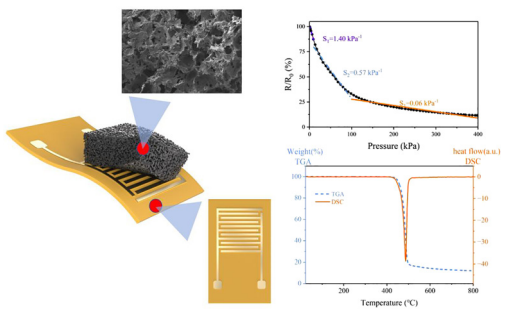

Ultrastable fluoropolymer-based porous conductive elastomer composites (PVDF–HFP/CB) for high-sensitivity pressure sensing applications

Sanfa Xie, Yaoqi Wei, Yaping Zhang, Wei Zhu and Xiangfei Liang*

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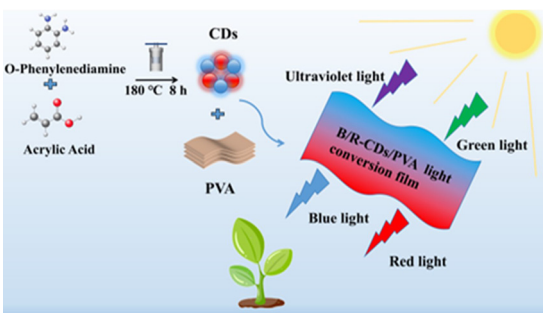

Preparation of high-performance blue-red dual-emission carbon dots and their application in light conversion films

Siyuan Yu, Yiyun Song, Hongmei Yu,* Shaoyan Wang* and Wei Chen*

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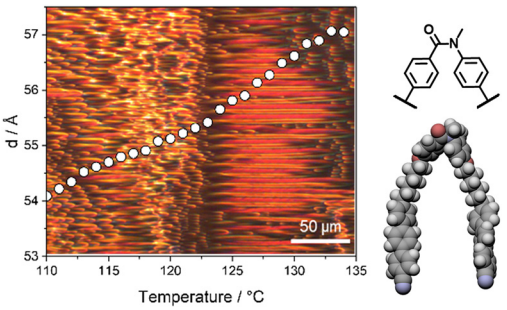
Liquid crystal trimers containing tertiary benzanilide groups

Grant J. Strachan, Magdalena M. Majewska, Ewan Cruickshank, Damian Pociecha, Ewa Gorecka, John M. D. Storey and Corrie T. Imrie*



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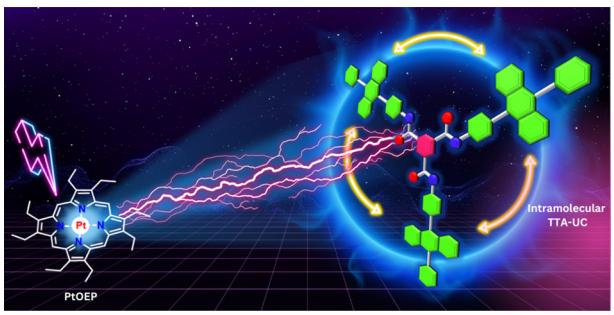
Diphenylanthracene-based trimeric systems for efficient photon upconversion through triplet–triplet annihilation

Alisha Sengupta, Sakura Nakagawa, Aakash Ravikant Likhar, Masanori Uji, Nobuhiro Yanai* and Deepak Asthana*



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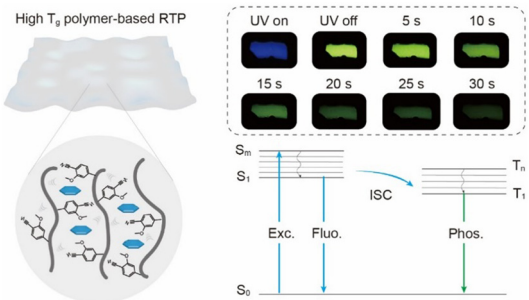
Chain-stiffening enhanced ultralong organic phosphorescence in high glass transition temperature polymers

Huan Chen, Mengyang Dong,* Yanxin Wu, Jingyi Shan, Zehua Long, Yaru Gao* and Long Gu*



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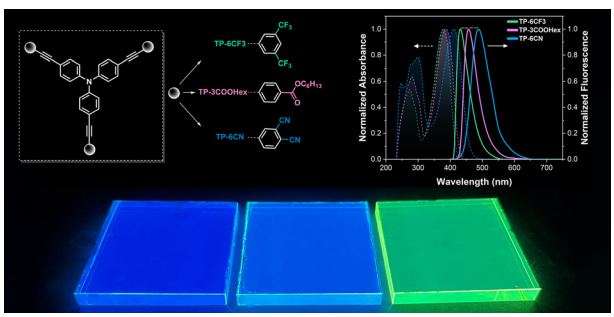
Luminescent solar concentrators based on environmentally friendly tripodal D–(pi–A)$_3$ triarylamine luminophores

Elisavet Tatsi, Venanzio Raglione, Gaia Roberta Ragno, Stefano Turri, Giuseppe Mattioli, Francesco Porcelli, Daniela Caschera, Chiara Botta, Gloria Zanotti* and Gianmarco Griffini*



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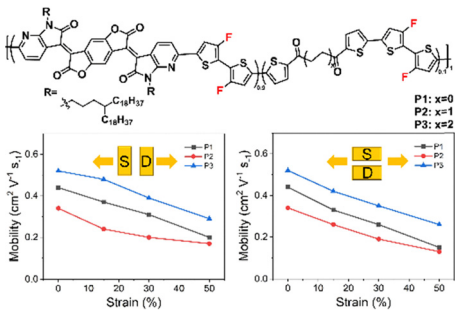

High-performance n-type stretchable OFETs enabled by molecular engineering of flexible polymers

Qian Che, Tianhao Zhang, Weifeng Zhang,* Jiadi Chen, Yunchao Zhang, Zhihui Chen, Youjia Li, Lei Yang, Liping Wang* and Gui Yu*

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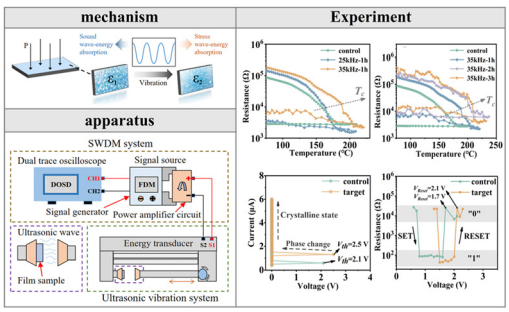
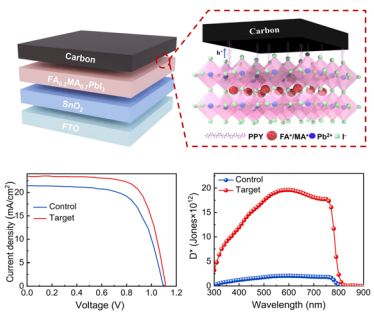


Regulation of properties of Sb flexible phase change films induced by ultrasonic vibration: a multi-dimensional study

Jinyang Huang and Yifeng Hu*

14498



Conductive polymer doped carbon electrode for high-performance hole transport layer free perovskite photovoltaics and self-powered photodetectors

Dongchang Shi, Hongkai Zhang, Xian Zhang, Jiayu Chen, Fanxiu Feng, Jingyi Wang, Yue Zhang, Panjie Shao, Zhixin Zhao, Yan Guan, Fangzhou Liu, Yangyang Zhang, Cuncun Wu,* Lixin Xiao* and Shijian Zheng

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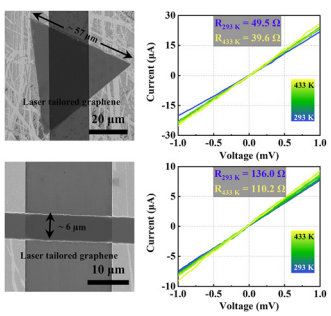

Shape customization of 2D materials using maskless ultrafast laser lithography

Weiqing Wu, Luchan Lin,* Xiaoyang Fu, Yifan Hu, Junde Ji, Xinde Zuo, Yiwei Yu and Zhuguo Li*

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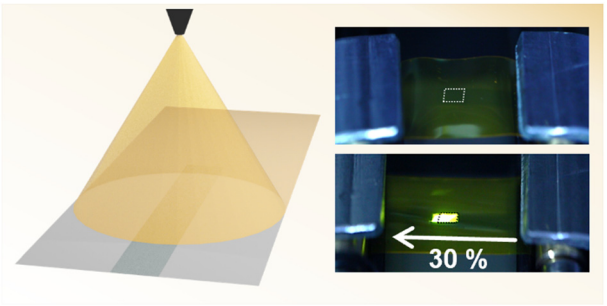
Stretchable light-emitting electrochemical cells fabricated by spray-coating

Sandra Gellner,* Etienne Auroux, Joan Ràfols-Ribé, Nicole Stracke, Kumar Saumya, Anton Kirch, Christian Larsen, Ekaterina Nannen and Ludvig Edman*



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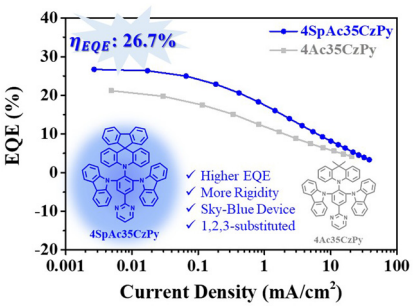
High-efficiency TADF materials featuring carbazole-modified spiroacridan-pyrimidine skeletons with an external quantum efficiency exceeding 26% in sky-blue light emission

Yi-Zhen Li, Fu-En Szu, Han-Yun Szu, Chao-Che Wu, Yong-Yun Zhang, Zong-Huan Li, Jiun-Haw Lee,* Tien-Lung Chiu* and Man-kit Leung*



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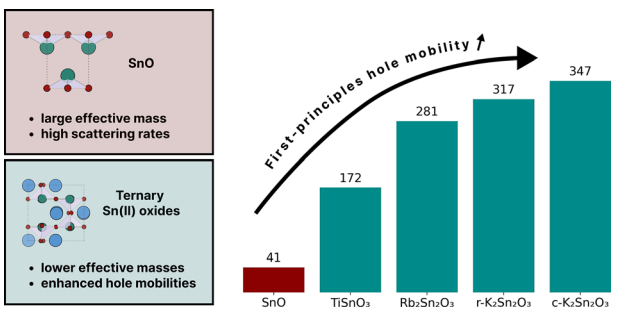
First-principles understanding of hole mobility and intrinsic transport mechanisms in Sn(II) oxides

Romain Claes, David O. Scanlon, Gian-Marco Rignanese and Geoffroy Hautier*



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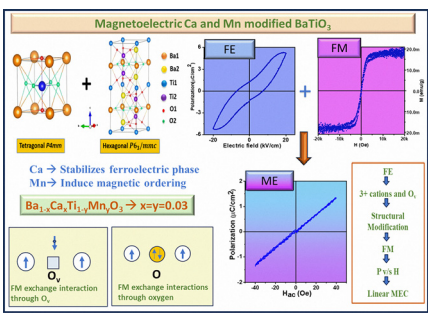
Room temperature multiferroicity and magnetoelectric coupling in Ca/Mn-modified $BaTiO_3$

P. Maneesha, Koyal Suman Samantaray, Rakhi Saha, Tabinda Nabi, Rajashri Urkude, Biplab Ghosh, Arjun K. Pathak, Indranil Bhaumik, Abdelkrim Mekki, Khalil Harrabi and Somaditya Sen*



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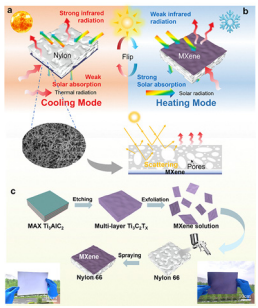
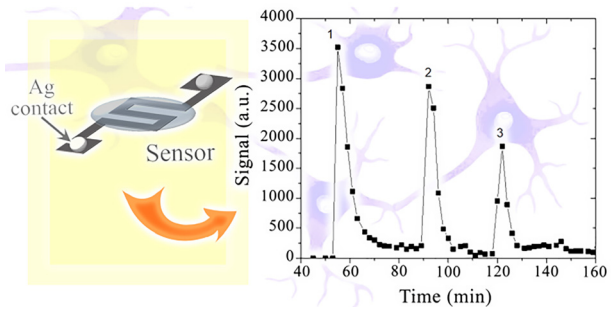


The elegance of simplicity: a cost-effective Janus membrane for all-day radiative thermal management inspired by complementary photothermal design

Ze Yang, Pengcheng Li, Tairan Wang, Yulin Liu, Hengzhi Zhang, Ke Wang and Chunyang Jia*

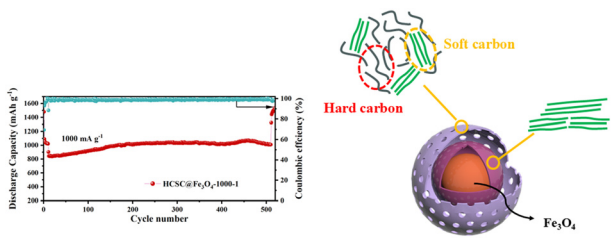
14586



Wearable resistive graphene-based sensor for human behavioral and mental monitoring

I. V. Antonova,* A. I. Ivanov, A. A. Buzmakova, O. P. Cherkasova, M. B. Shavelkina and N. A. Nebogatikova

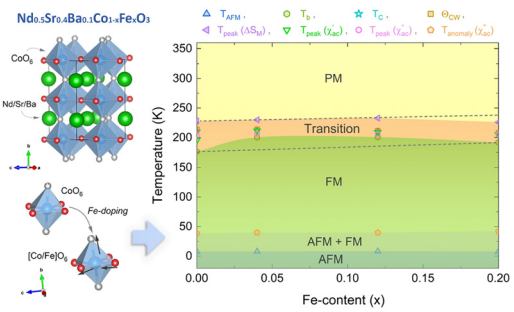
14596



Superior lithium storage performance of an Fe_3O_4 anode encapsulated by dual-layered interwoven carbon nanostructures using a facile one-step pyrolysis approach

Yuxuan Zhang, Dongfeng Li, Peng Wang, Qinliang Li, Bingbing Hu, Yuheng Sun, Anke Du and Xiaoya Yuan*

14608



Magnetostructural coupling, Kondo-like behavior, and magnetocaloric performance in Fe-doped $Nd_{0.5}(Sr_{0.4}Ba_{0.1})CoO_3$ perovskites

R. S. Silva Jr.,* F. Serrano-Sánchez, J. E. Rodrigues, C. Santos, J. M. Attah-Baah, R. D. dos Reis, J. L. Martínez, J. A. Alonso and N. S. Ferreira*

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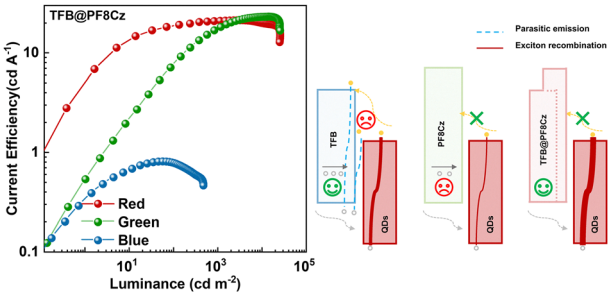
Blended hole-transport layer for efficient and stable full-color NiO_x-based QLEDs

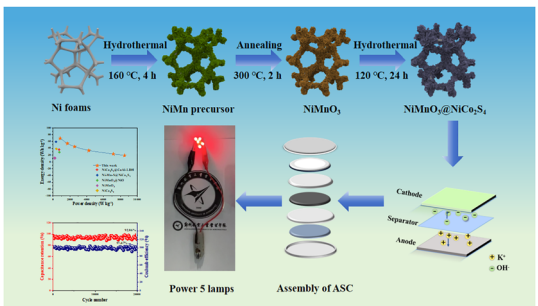
Meng-Wei Wang, Yin-Man Song, Hang Liu, Ting Ding, Jing Jiang, Pei-Li Gao,* Kar Wei Ng* and Shuang-Peng Wang*



14631

Flower-shaped $NiMnO_3$@$NiCo_2S_4$ heterojunction nanosheets for a high-performance asymmetric supercapacitor

Zhanjun Yu,* Kanglei Xu, Erbin Liu, Xinlong Yao, Meng Wei, Yan Li and Jiehu Cui*



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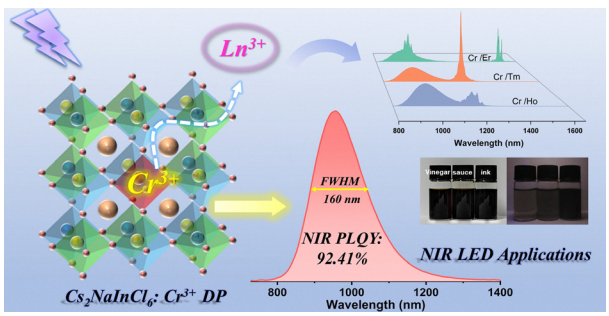
Cr^{3+}-induced broadband near-infrared I combined with near-infrared II emission *via* rare earth co-doping in $Cs_2NaInCl_6$ for multifunctional detection

Hui Xie, Hui Fu,* Zhentao Du,* Linjie Tong, Jinliang Jiang, Xue Jiang, Jialong Zhao, Weiyou Yang and Jinju Zheng*



14657

Halogen-bonded ionic liquid crystals: supramolecular organization and ionic transport

Mercedes Marcos, Alberto Concellón, Almudena Terrel, Rosa I. Merino, Rosa M. Tejedor, Joaquín Barberá, José L. Serrano* and Santiago Uriel*