

Journal of Materials Chemistry C

Materials for optical, magnetic and electronic devices

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ISSN 2050-7526 CODEN JMCCCX 12(17) 5995–6360 (2024)



Cover

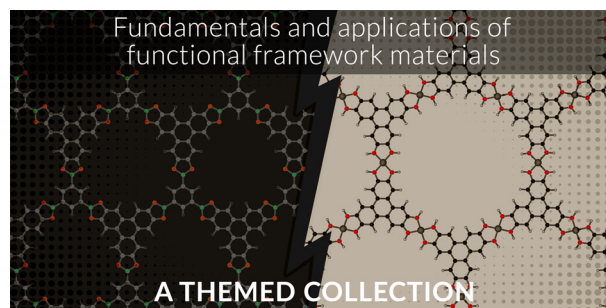
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EDITORIAL

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Fundamentals and applications of functional framework materials: a themed collection

Artur Ciesielski,* Christopher H. Hendon* and
Katherine A. Mirica*

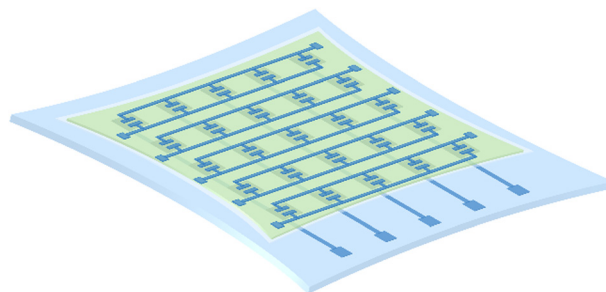


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Intrinsically stretchable organic field-effect transistors: progress and challenges

Jing Sun, Guodong Zhao, Mingxin Zhang, Xiaoli Zhao,
Yanhong Tong,* Qingxin Tang* and Yichun Liu



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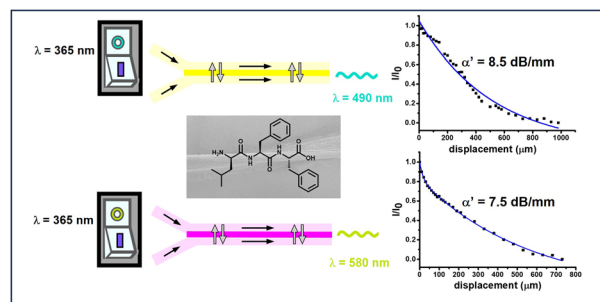
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COMMUNICATION

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Microfluidic-driven short peptide hydrogels with optical waveguiding properties

Ana M. Garcia,* Juan A. Garcia-Romero, Sara H. Mejias, Pilar Prieto, Vittorio Saggiomo, Aldrik H. Velders, M. Laura Soriano, Victor Ruiz-Díez, Juan Cabanillas-González* and M. Victoria Gomez*

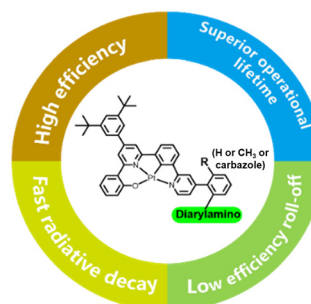


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Tetradentate Pt[O[−]N[−]C[−]N[−]] complexes with peripheral diarylamino substituents for high-performance and stable green organic light-emitting diodes with LT₉₅ of 17 140 h at 1000 cd m^{−2}

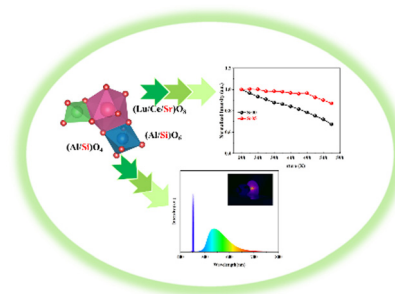
Huiyang Li, Yuanhai Yi, Xiaofeng Tan, Lei Dai, Faan-Fung Hung, Gang Cheng, Kaixin Tan, Ziyong Chen, Jun Yang, Pengcheng Zhou,* Xugang Shu* and Chi-Ming Che*



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Ce:(Lu,Sr)₃(Al,Si)₅O₁₂ transparent ceramics for high-power white LEDs/LDs with ultra-high luminance saturation threshold

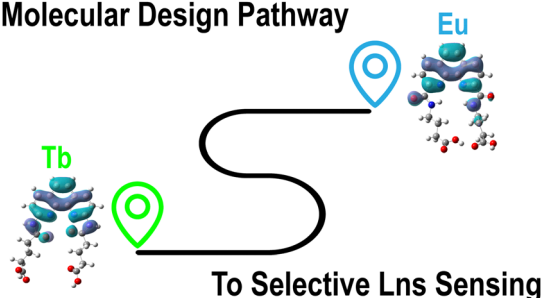
Xiyue Zhang, Pengfei Sang, Cong Wei, Shenghui Lin, Jian Kang, Yanbin Li,* Bingheng Sun, Yang Li, Farida A Selim, Chunming Zhou, Tianyuan Zhou, Shiwei Chen, Chaofan Shi, Wieslaw Stręk, Hao Chen* and Le Zhang*



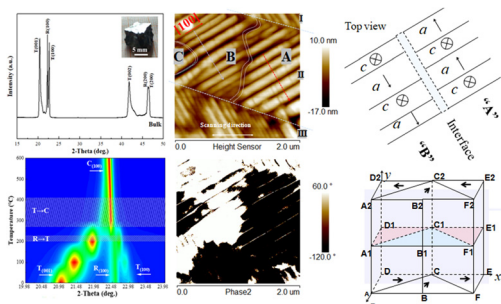
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A step forward in unraveling the lanthanide discrimination puzzle: structure–selectivity relationship based on phenanthroline diimide ligands towards europium and terbium detection in water

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Molecular Design Pathway

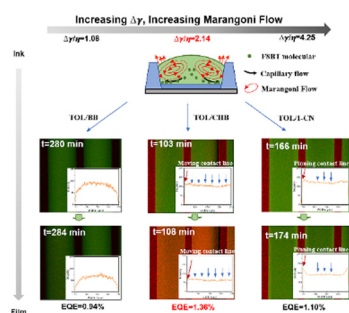
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Well-defined polymorph transformation sequences and novel tetragonal twin-domain patterns in the morphotropic phase boundary of Dy-modified BiFeO₃–PbTiO₃ single crystals

Yanzi Xiang, Jian Zhuang,* Zhuohua Tang, Zheyi An, Yi Zhang, Guobao Feng, Stas P. Kubrin, Wei Ren and Nan Zhang*

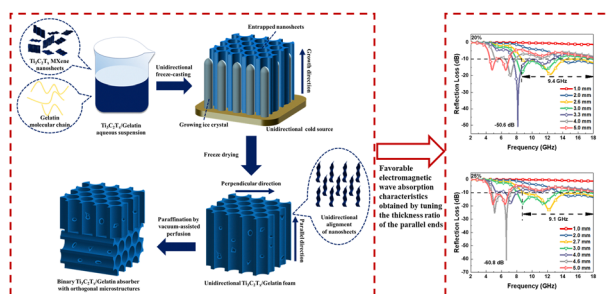
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Improving the uniformity of the inkjet-printed polymer film in a bank by Marangoni flow and contact line sliding

Xuele Liu, Dong Lv, Yinghan Li, Saiyin Hou, Xinhong Yu* and Yanchun Han*

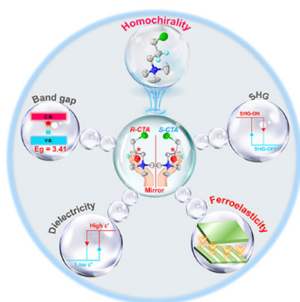
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Enhanced electromagnetic absorption properties of the double-layer Ti₃C₂T_x MXene absorber with orthogonal microstructures

Yuanhao Ning, Shuang Yang, Xianxian Sun, Shasha Wang, Lei Liang, Yuanjing Cheng, Ye Yuan* and Yibin Li*

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Homochirality to design high-*T_c* lead-free ferroelastic semiconductors

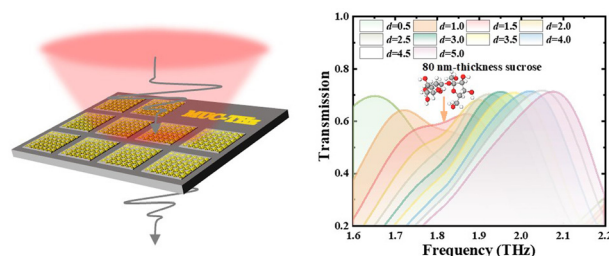
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A terahertz metasurface biosensor based on electromagnetically induced transparency for fingerprint trace detection

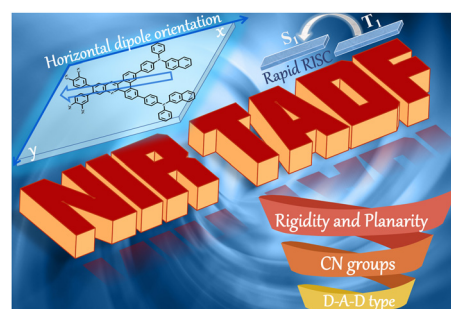
Rong Zhao, Qiang Niu, Yi Zou, Bin Cui and Yuping Yang*



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Enhancing reverse intersystem crossing and horizontal dipole orientation for near-infrared thermally activated delayed fluorescence molecules by donor engineering strategy

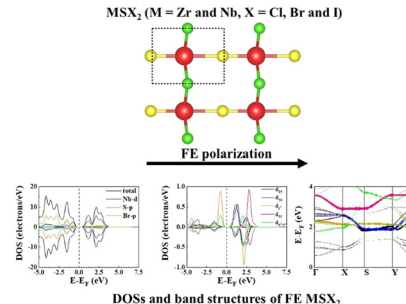
Jianzhong Fan,* Huanling Liu, Yuzhi Song, Lili Lin, Chuan-Kui Wang,* Yuanyuan Xu* and Xin Zhao*



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Multiferroicity in 2D MSX_2 ($M = Nb$ and Zr ; $X = Cl, Br$, and I)

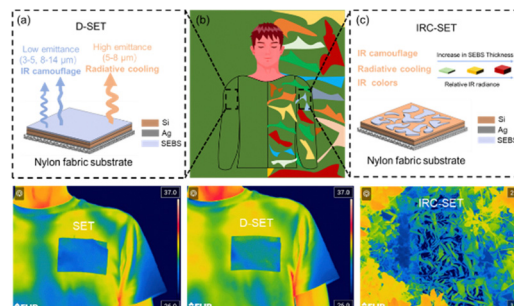
Yutong Li, Haoyun Bai, Zhichao Yu, Chi Tat Kwok* and Hui Pan*



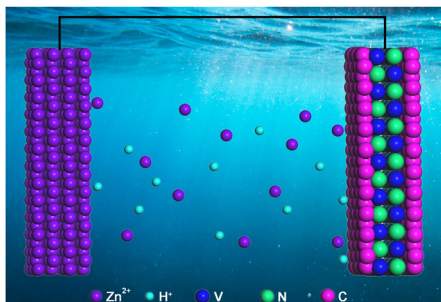
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Engineered spectrally selective and spatially segmented emittances for infrared camouflage textiles

Xuemei Huang, Qixiang Chen, Jinhua Huang, Jie Cheng, Jiaping Zhang, Hua Xu, Ke Wang, Hongyu Lv, Yunzhe Wang, Weijie Song* and Yuehui Lu*



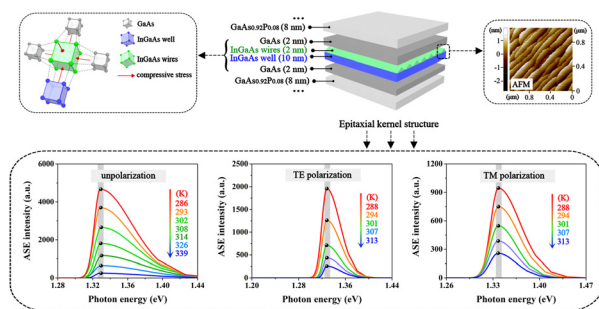
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Carbon-enveloped pea-shaped vanadium nitride nanorods for aqueous zinc ion batteries

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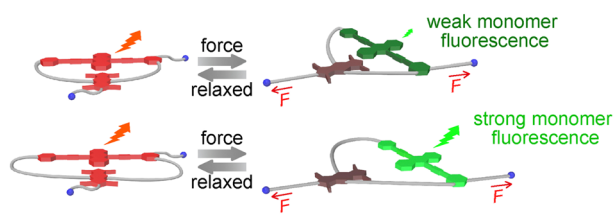
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Realization of temperature-insensitive energy band-gap based on nanowire-well quantum systems for thermally frequency-stable laser diodes

Yuhong Wang, Hanxu Tai, Ruonan Duan, Ming Zheng, Yue Shi, Jianwei Zhang, Xing Zhang, Yongqiang Ning and Jian Wu*

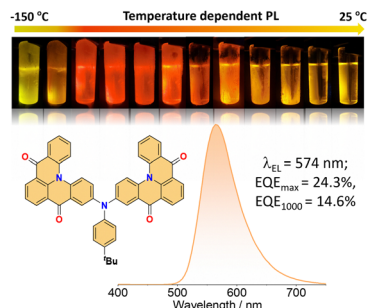
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Ring-size dependent ratiometric photoluminescence of cyclophane mechanophores

Shakkeeb Thazhathethil, Fazil Salim Thuluvanchery, Shohei Shimizu, Iulia Scarlat, Jess M. Clough, Christoph Weder and Yoshimitsu Sagara*

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Efficient orange organic light-emitting diodes employing a central aniline bridged multiresonant thermally activated delayed fluorescence emitter

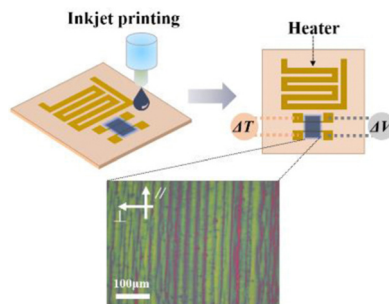
Sen Wu, Ya-Nan Hu, Jingxiang Wang, Dianming Sun,* Kai Wang, Xiao-Hong Zhang* and Eli Zysman-Colman*



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The role of substrates and electrodes in inkjet-printed PEDOT:PSS thermoelectric generators

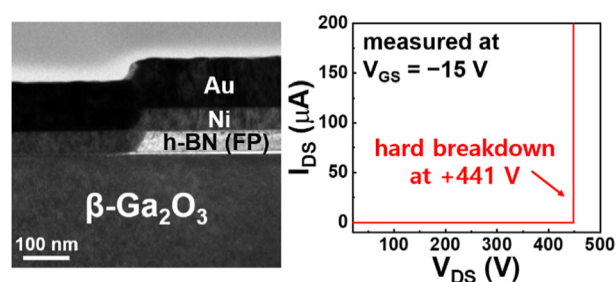
Jiang Jing, Loup Chopplet, Nicolas Battaglini, Vincent Noël, Benoît Piro, Tim Leydecker, Zhiming Wang,* Giorgio Mattana* and Emanuele Orgiu*



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A high-breakdown-voltage β -Ga₂O₃ nanoFET with a beveled field-plate structure

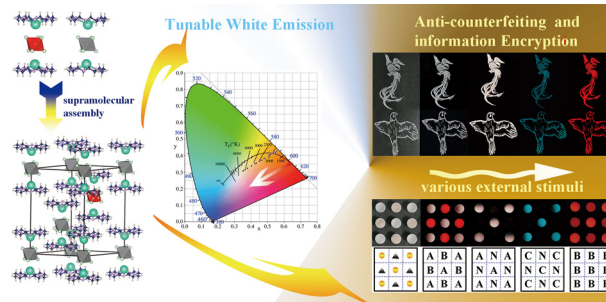
Jeongmin Kim, Hyeongwoo Kim, Inho Kang, Junghun Kim, Seokjin Ko, Jinho Bae* and Jihyun Kim*



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A universal supramolecular assembly strategy for achieving efficient tunable white emission and anti-counterfeiting in antimony doped tin(IV)-based vacancy-ordered double perovskites

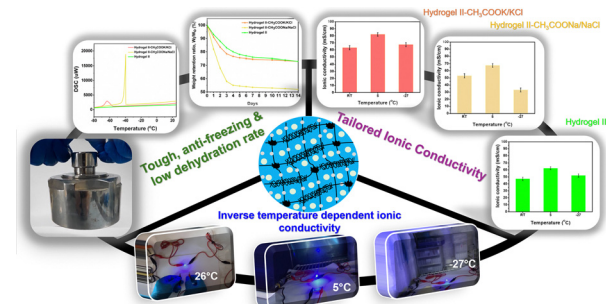
Minghui Lu, Hui Peng,* Qilin Wei, Shichao Zhou, Yongrun Dong, Shuiyue Yu, Jialong Zhao, Xianci Zhong and Bingsuo Zou*



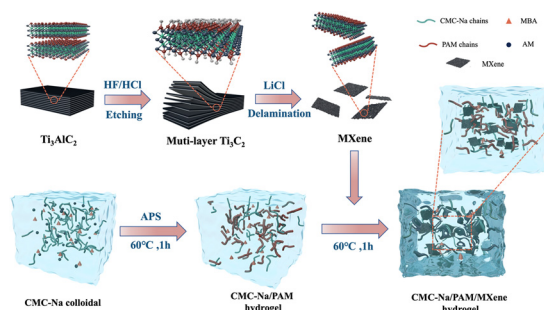
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A tough, anti-freezing, and low-dehydration rate gelatin hydrogel with inverse temperature-dependent ionic conductivity

Aiman Saeed, Syed Farrukh Alam Zaidi,* Junyoung Mun, Hyung Koun Cho, Seung-Boo Jung, Nae-Eung Lee, Chun Gwon Park* and Jung Heon Lee*



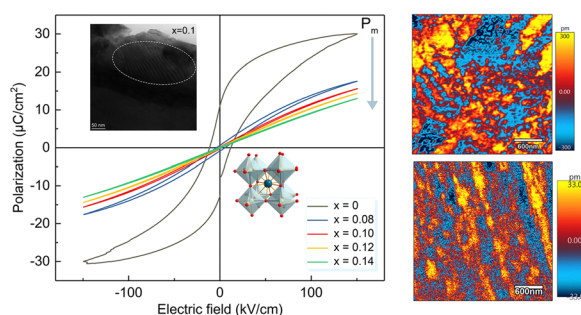
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Conductive MXene nanocomposite organohydrogels for ultra-stretchable, low-temperature resistant and stable strain sensors

Yafei Liu, Yujie Gui, Ying Lv, Huixia Feng,* Xia Zhao,* Jianhui Qiu, Xuemei Ma and Yuchen Yang

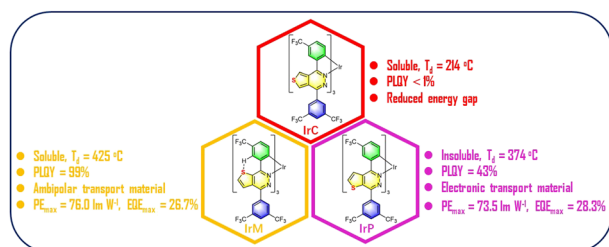
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Optimized energy storage performance in $(\text{Ba}_{0.8}\text{Sr}_{0.2})\text{TiO}_3$ -based ceramics via $\text{Bi}(\text{Zn}_{0.5}\text{Hf}_{0.5})\text{O}_3$ -doping

Jia-Jia Ren, Di-Ming Xu,* Qian-Qian Ma, Da Li, Wei-Chen Zhao, Zhen-Tao Wang, Tao Zhou, Wen-Feng Liu and Di Zhou*

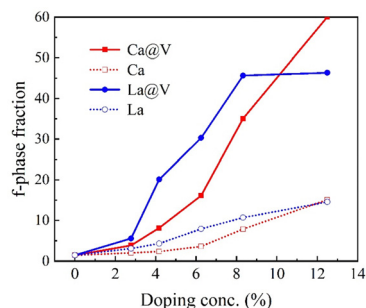
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The isomeric effect of thienopyridazine-based iridium complexes

Jia-Ling Zhang, Fu-Jun Zhang, Hui-Hui Xu, Zheng-Ze Li, Ren Sheng, Qian-Feng Zhang, Bi-Hai Tong,* Ping Chen* and Hui Kong*

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Charge-compensated co-doping stabilizes robust hafnium oxide ferroelectricity

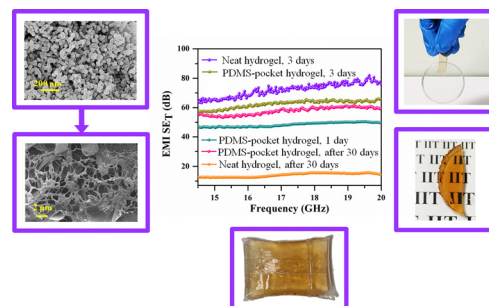
Gang Li, Yulin Liu, Shaoan Yan, Ningjie Ma, Yongguang Xiao, Minghua Tang* and Zhilin Long*



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A PDMS pocket based transparent polydopamine-decorated polypyrrole nanofibril–polyacrylamide hydrogel for EMI shielding applications

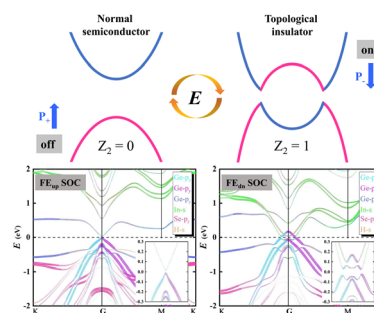
Anurima De, Ankita Mondal, Arkapriya Das, Parna Maity and Bhanu Bhusan Khatua*



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Nonvolatile electric-field control of topological phase transition in a two-dimensional ferroelectric heterostructure

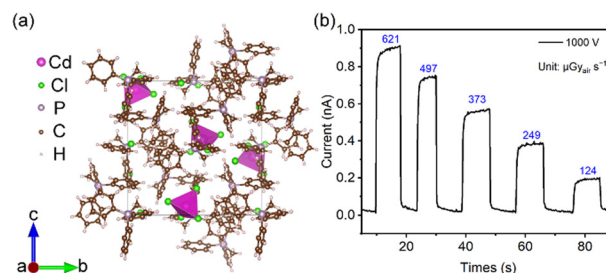
Xunkai Duan, Ziyue Zhu, Xiaofang Chen, Zhigang Song* and Jingshan Qi*



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Direct X-ray detectors made of zero-dimensional hybrid metal halide perovskite single crystals

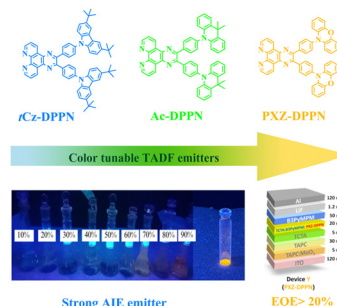
Guangya Zheng, Haodi Wu,* Zhiwu Dong, Tong Jin, Jincong Pang, Yujue Liu, Zhiping Zheng, Guangda Niu, Ling Xu and Jiang Tang*



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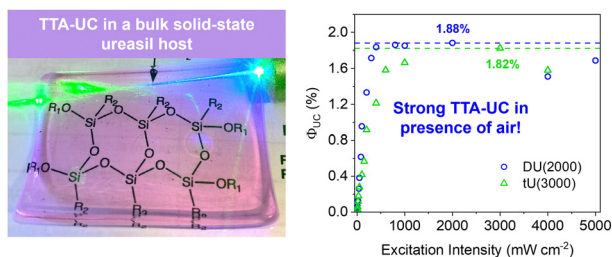
Pyrazino[2,3-f][1,10]phenanthroline-based color-tunable thermally activated delayed fluorescence emitters with AIE characteristics for high-efficiency organic light-emitting diodes

Pratima Yadav, Sunil Madagyal, Aniket Chaudhari, Gokul Ganesan, Guan-Yu Su, Yi-Ting Chen, Prabhakar Chetti, Chih-Hao Chang,* Shantaram Kothavale* and Atul Chaskar*



PAPERS

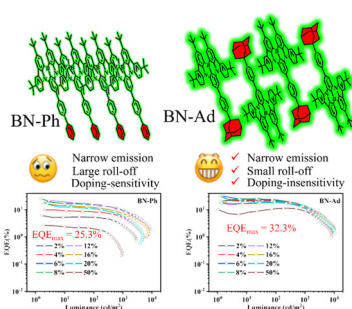
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Ambient solid-state triplet–triplet annihilation upconversion in ureasil organic–inorganic hybrid hosts

Abigail R. Collins, Bolong Zhang, Michael J. Bennison and Rachel C. Evans*

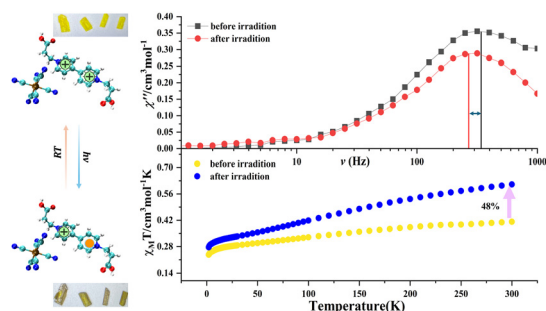
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High-efficiency narrowband multi-resonance TADF emitters via the introduction of bulky adamantane units

Yanyu Qi, Zehua Zhang, Weidong Sun, Shaohua Wu, Jianting Liu, Zhongkui Lin, Pengcheng Jiang,* Haitao Yu,* Liang Zhou* and Guangzhao Lu*

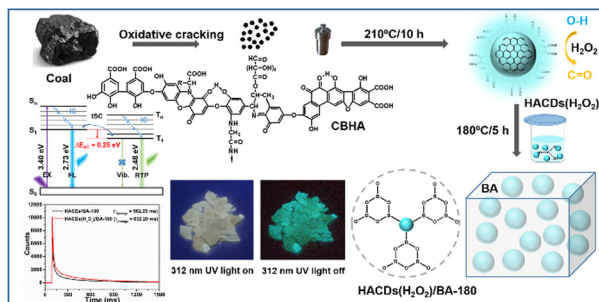
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Metal–cyanide hybrid materials exhibiting photochromic and photomagnetic responses based on viologen receptors

Hao Wang, Teng-Da Zhou, Ji-Tun Chen, Han Yan and Wen-Bin Sun*

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Room-temperature phosphorescence in coal-based humic acid-derived carbon dots

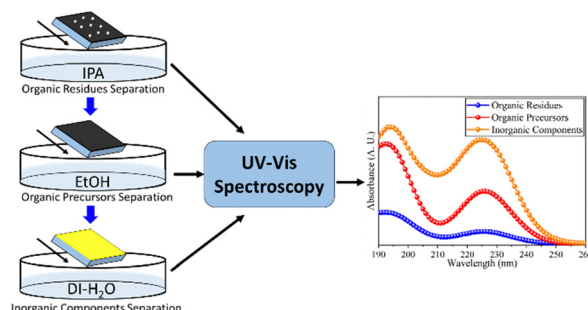
Ziguo He,* Mukfung Yuen, Cheng Zhang, Jian Zhang, Zhicai Wang,* Caibo Yue, Mingfu Ye and Kui Zhang*



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Investigation of the stoichiometric deviation between the mixed cation, mixed halide lead perovskite thin film and its precursor solution

Hio-Kun Si, Ahmed Fouad Musa, Tzu-Sen Su* and Tzu-Chien Wei



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Nanoristors: highly uniform, sub-500-millivolt, large-scale, and robust molybdenum disulfide nanograined memristors

Gunhoo Woo, Hyeong-U Kim, Byung Chul Jang, Muhammad Naqi, Seongin Hong, Arindam Bala, Seunghun Kang, Yunseok Kim, Sunkook Kim,* Taesung Kim,* Jae-Joon Kim* and Hocheon Yoo*

