

Journal of Materials Chemistry C

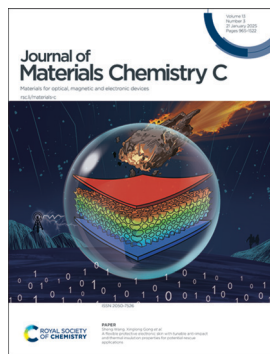
Materials for optical, magnetic and electronic devices

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Cover

See Sheng Wang, Xinglong Gong *et al.*, pp. 1146–1156.
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2024 *Journal of Materials Chemistry* Lectureship runners-up: Maxx Arguilla, University of California, Irvine, United States, and Phillip Milner, Cornell University, United States



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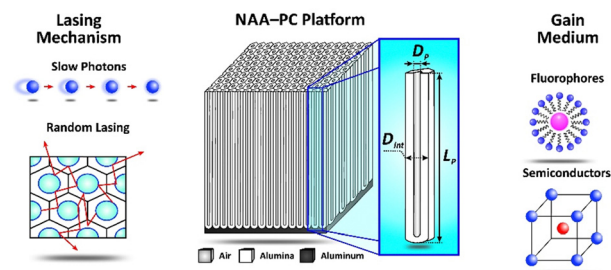
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Nanoporous anodic alumina photonic crystals for solid-state lasing systems: state-of-the-art and perspectives

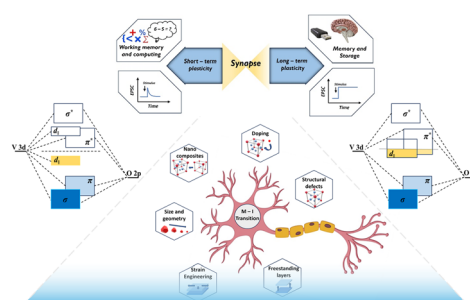
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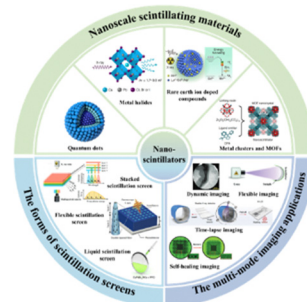
K. Gurukrishna, Aditya Uday Kamat and Shikhar Misra*



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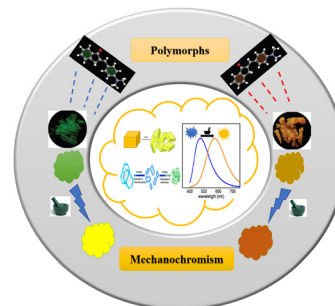
Yuan Zhong, Xujiang Yu* and Wanwan Li*



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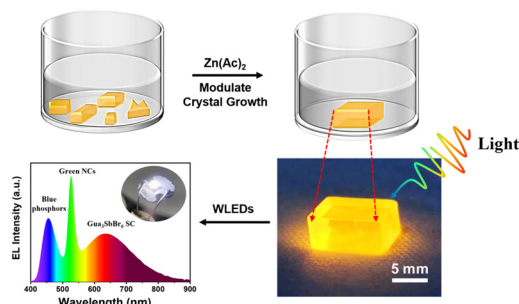
Polymorphism in mechanochromic luminogens: recent advances and perspectives

Ramakant Gavale, Faizal Khan and Rajneesh Misra*



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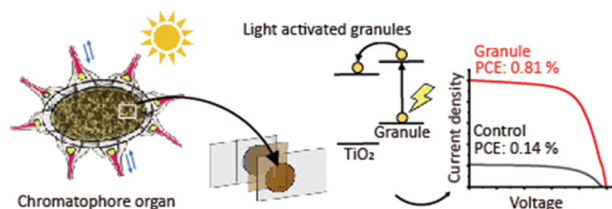
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Centimeter-scale Gd_3SbBr_6 single crystals for white light-emitting diodes enabled by inhibition of multi-site nucleation

Yongjiang Dou, Zirui Liu, Quanzhen Huang, Tiantian Shi, Sheng Wang* and Xuyong Yang*

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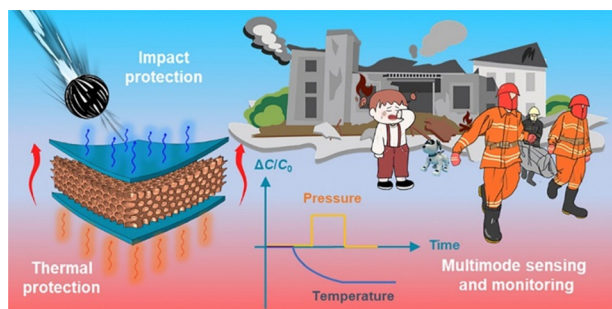


Cephalopod chromatophores contain photosensitizing nanostructures that may facilitate light sensing and signaling in the skin

Taehwan Kim, Duncan Q. Bower and Leila F. Deravi*

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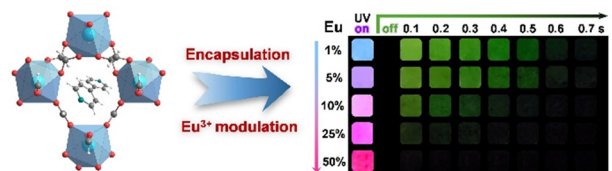
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A flexible protective electronic skin with tunable anti-impact and thermal insulation properties for potential rescue applications

Wenhui Wang, Sheng Wang,* Zimu Li, Jianyu Zhou, Shuai Liu, Tingting Xuan, Junshuo Zhang and Xinglong Gong*

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Jiabo Chen, Renrui Sun, Wanjuan Yang, Feifei Xing, Xiaolin Yu and Lining Sun*

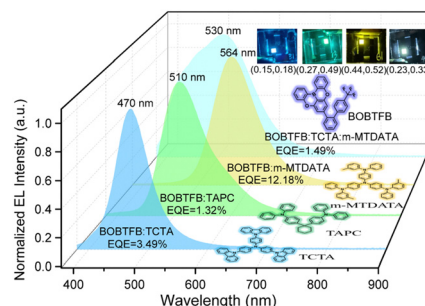


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A novel deep-blue fluorescent emitter employed as an identical exciplex acceptor for solution-processed multi-color OLEDs

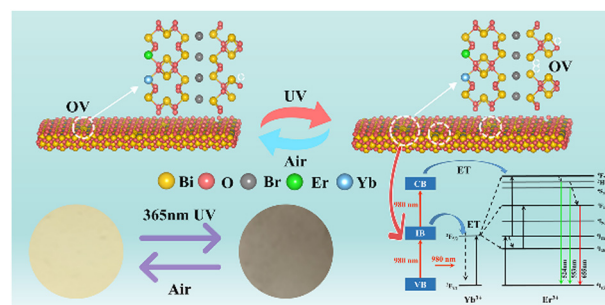
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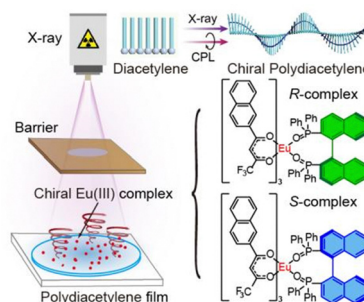
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X-Ray imaging and enantioselective photopolymerization enabled by chiral $\text{Eu}(\text{III})$ complex nanoscintillators

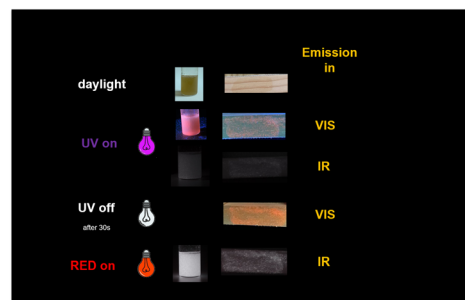
Zejian Li, Chenxi Zhang, Yan Li, Yiming Wu, Wenchao Zhang* and Chenlu He*



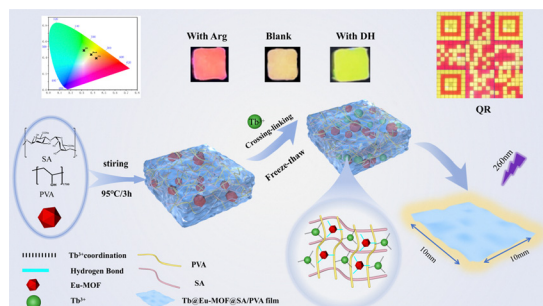
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Multimodal anti-counterfeiting inks: modern use of an ancient pigment in synergy with a persistent phosphor

Francesco Armetta, Alessandro Lo Bianco, Vitalii Boiko, Dariusz Hreniak* and Maria Luisa Saladino*



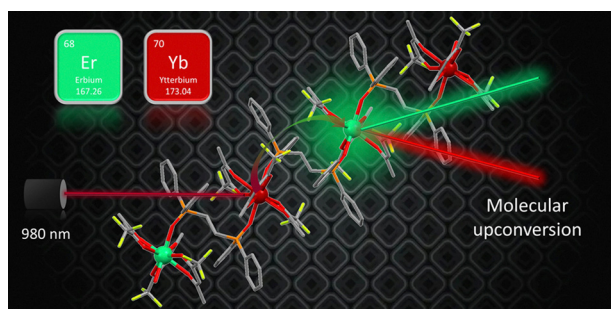
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Tb(III)-functionalized MOF hybridized bis-crosslinked networked hydrogel luminescent films for arginine and dopamine hydrochloride sensing and anticounterfeiting

Jiaxuan Pan, Jiazhen Lu, Yichen Shang, Ying Li* and Bing Yan*

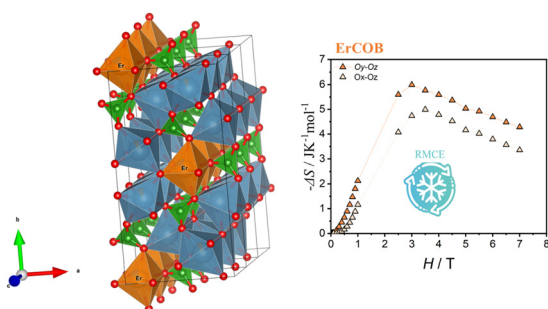
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The role of terminal and bridge ligands in the molecular upconversion of lanthanide(III) 1D coordination polymers

Stefano Angerami de Andrade, Ailton Germano Bispo-Jr, Deborah de Alencar Simoni, Javier Ellena, João Honorato de Araujo Neto, Italo Odone Mazali and Fernando Aparecido Sigoli*

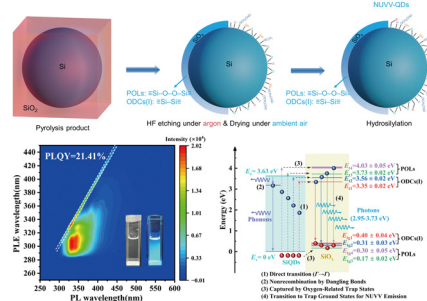
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Large magnetic anisotropy and a rotating cryomagnetocaloric effect in single-crystalline paramagnetic lanthanide calcium oxyborates $\text{LnCa}_4\text{O}(\text{BO}_3)_3$ with $\text{Ln} = \text{Pr}, \text{Nd}, \text{Gd}, \text{Er},$ and Tm

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Facile synthesis of silicon quantum dots with photoluminescence in the near-ultraviolet to violet region via wet oxidation

Yizhou He, Qianxi Hao, Chi Zhang, Qi Wang, Wenxin Zeng, Jiamin Yu, Xue Yang,* Shaorong Li, Xiaowei Guo* and Serguei K. Lazarouk

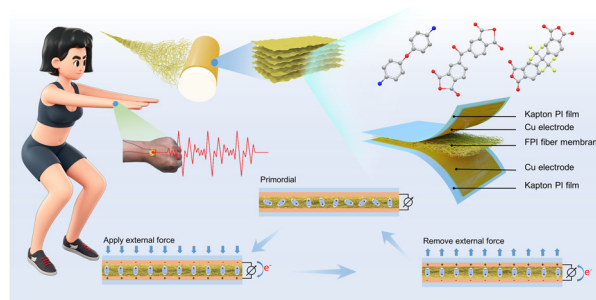


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Unexpected piezoelectric properties of electrospun polyimide nanofibers for application in an extreme environment

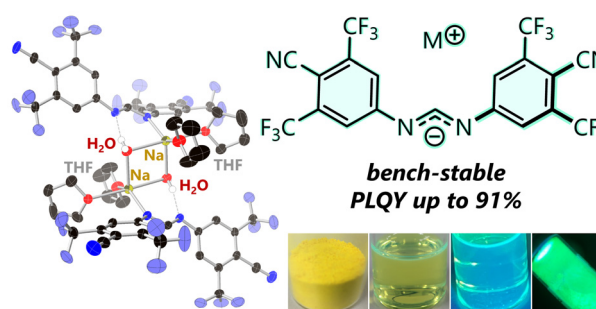
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Intense fluorescence of air-stable sodium diarylformamidinate: effective control with a novel electron-withdrawing 4-cyano-3,5-bis(trifluoromethyl)phenyl group

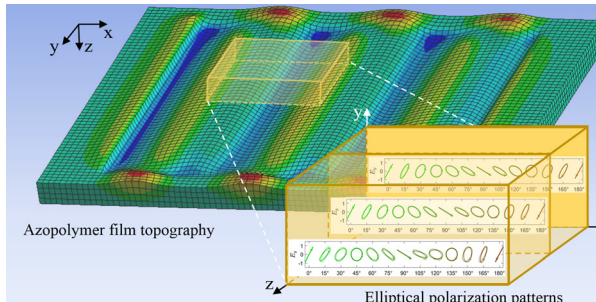
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Viscoplastic photoalignment modeling of asymmetric surface restructuring in azopolymer films by elliptically polarized light

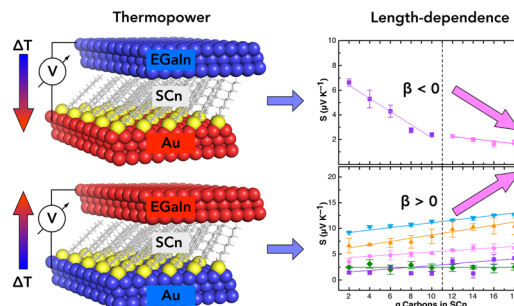
Nina Tverdokhleba, Biagio Audia, Pasquale Pagliusi* and Marina Saphiannikova*



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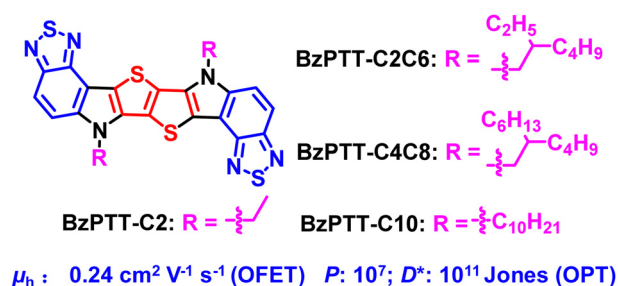
Length-dependent thermopower of self-assembled monolayers of alkanethiolates depends on direction of temperature gradient

C. Lungani Mthembu and Ryan C. Chiechi*



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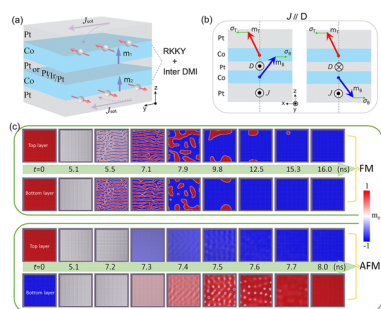
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Design, synthesis, and optoelectronic properties of benzothiadiazole-fused sulfur and nitrogen-containing polycyclic heteroaromatics

Yuxin Yin, Rui Shi, Zhongwei Liu, Yanru Li, Ting Jiang, Lingxu Zhao, Jie Li,* Deyang Ji, Liqiang Li and Zhuping Fei*

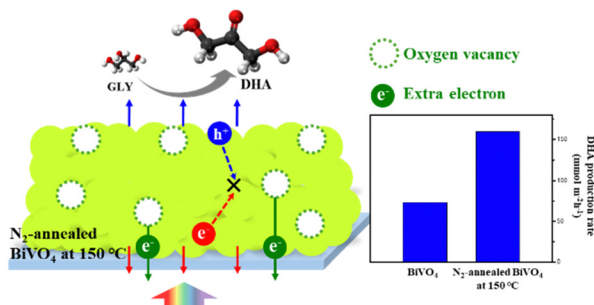
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Micromagnetic dynamics in field-free magnetization switching assisted by interlayer Dzyaloshinskii–Moriya interaction

Cuixiu Zheng, Wenqing He, Mo Zhu, Caihua Wan, Xiufeng Han* and Yaowen Liu*

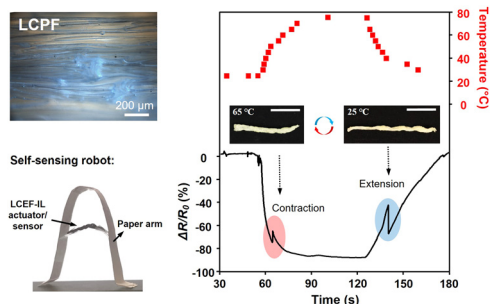
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Robust dihydroxyacetone production via photoelectrochemical glycerol oxidation using an oxygen vacant BiVO₄ photoanode

Yeji Lee, Yeseul Jo and Youn Jeong Jang*

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Temperature and locomotion dual self-sensing soft robots based on liquid crystal polymer foams

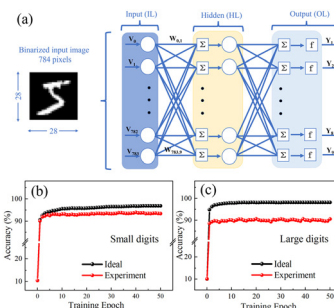
Shuyun Zhuo, Jie Jiang, Yaru Ma, Yiming Chen and Yue Zhao*



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Solution-processed LiGdO solid electrolyte for an In_2O_3 synaptic transistor and its application in neuromorphic computing

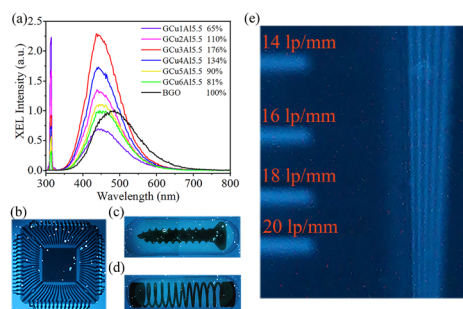
Yixiao Du, Wenlan Xiao, Guangtan Miao, Zezhong Yin, Ranran Ci, Guoxia Liu* and Fukai Shan*



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An efficient Cu^+ doped Gd-based fluoroaluminosilicate scintillator glass for X-ray detectors

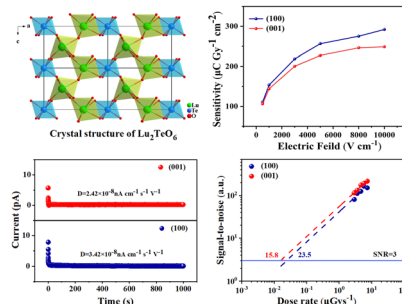
Guanlin He, Lianjie Li, Junyu Chen, Yujia Gong and Hai Guo*



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Oxide Lu_2TeO_6 single crystals for X-ray detection with an ultralow detection limit

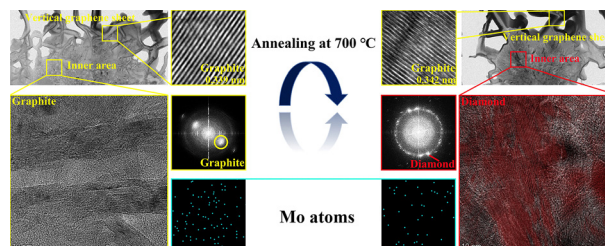
Tingting Cao, Feifei Guo,* Fuai Hu, Xutang Tao and Zeliang Gao*



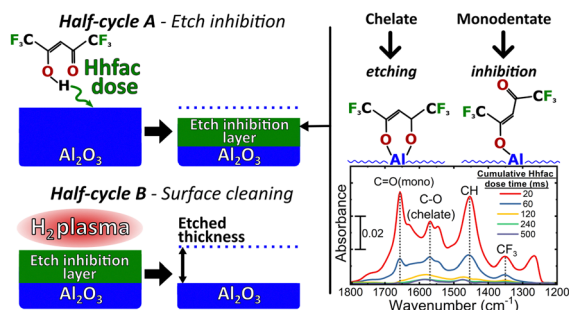
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Vertical graphene and nanodiamond composited films prepared by loading monodispersed molybdenum atoms and annealing

Chengke Chen, Chengquan He, Luxiao Hong and Xiaojun Hu*



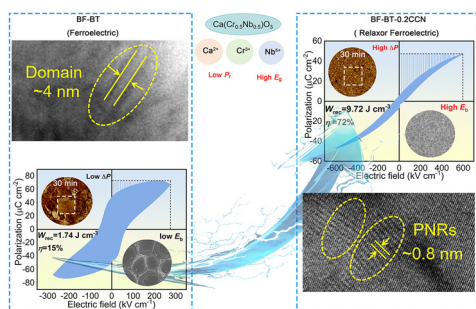
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Investigation of the atomic layer etching mechanism for Al_2O_3 using hexafluoroacetylacetone and H_2 plasma

Nicholas J. Chittock, Joost F. W. Maas, Ilker Tezsevin, Marc J. M. Merkx, Harm C. M. Knoops, Wilhelmus M. M. (Erwin) Kessels and Adriaan J. M. Mackus*

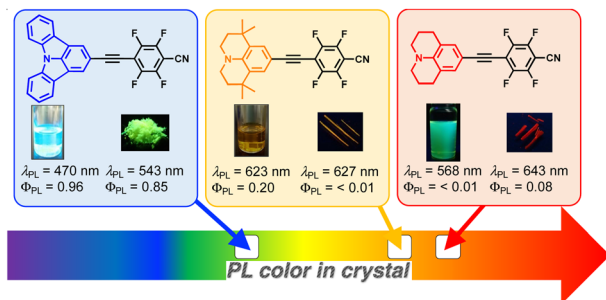
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Enhancing energy storage density in lead-free BiFeO_3 -based relaxor ferroelectric ceramics through multiple optimization designs

Hengtong Zhao, Pei Han,* Tiantian Zhang, Hao Li, Jianhua Wu, Liwen Zhang, Jinhua Du, Junyan Zhang, Ye Zhao,* Yunying Liu* and Yong Li*

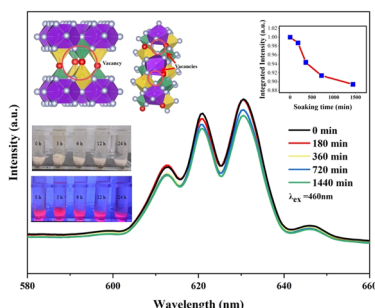
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Solid-state red fluorescence of intramolecularly ring-fused donor- π -acceptor-type fluorinated diphenylacetylenes achieved by enhancing intramolecular charge transfer properties

Kazuki Kobayashi, Shigeyuki Yamada,* Masato Morita, Tsuneaki Sakurai, Motohiro Yasui and Tsutomu Konno

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The structure transition and luminescence performance of a high moisture resistant $\text{KNaNbOF}_5\text{:Mn}^{4+}$ red phosphor

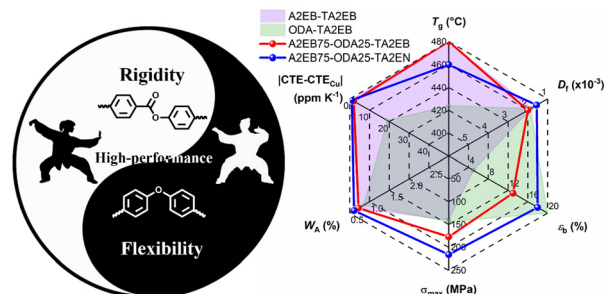
Daoyuan Ma, Yunzheng Liu, Wenfa Fang, Jinliang Huang and Libin Xia*



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The structure design of poly(ester imide)s with low dielectric loss and high mechanical properties

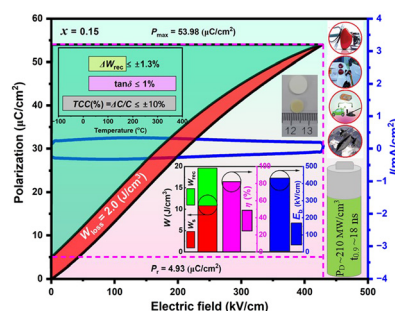
Chenggang Zhang, Xiaojie He and Qinghua Lu*



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Enhanced energy storage performance with excellent thermal stability of BNT-based ceramics via the multiphase engineering strategy for pulsed power capacitor

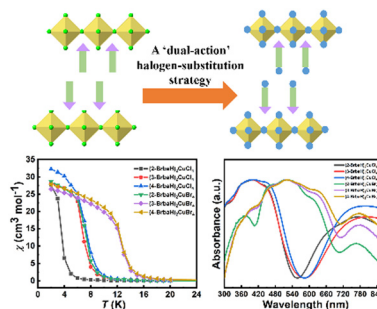
Maqbool Ur Rehman, Aiwen Xie, Attaur Rahman, Yi Zhang, Ao Tian, Xuewen Jiang, Xinchun Xie, Cong Zhou, Tianyu Li, Liqiang Liu, Xin Gao, Xiaokuo Er and Ruzhong Zuo*



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Stronger polar ferromagnetism and narrower optical band gaps in two-dimensional hybrid copper perovskites induced by bromine-substitution

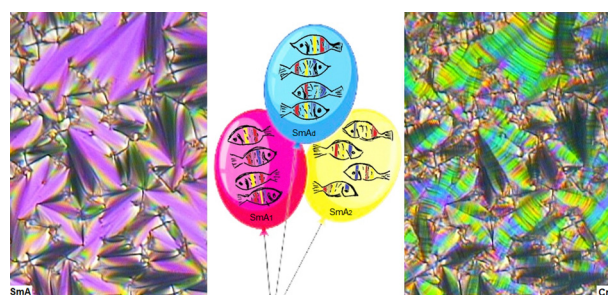
Ceng Han,* Jason A. McNulty, Alasdair J. Bradford, Alexandra M. Z. Slawin, Stephen L. Lee and Philip Lightfoot*



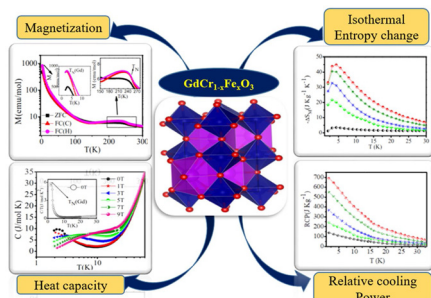
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Polar-end 3,5-diarylisoxazole liquid crystals with SmA and highly ordered CrE mesophases

Caroline S. B. Weber, Rafaela R. da Rosa, Bruno B. de Araújo, Lindimar B. Avila, Leonardo N. Furini, Ivan H. Bechtold, Juliana Eccher and Aloir A. Merlo*



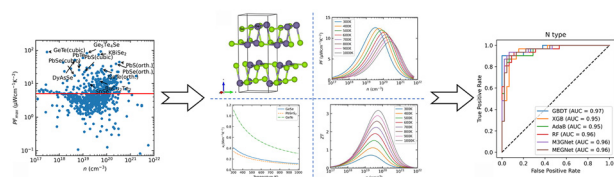
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Giant magnetocaloric effect in Fe-doped rare earth orthochromite $\text{GdCr}_{0.5}\text{Fe}_{0.5}\text{O}_3$

Abinash Prusty, Sudipta Mahana, B. Sheetal Priyadarshini, Andrei Gloskovskii, D. Topwal and U. Manju*

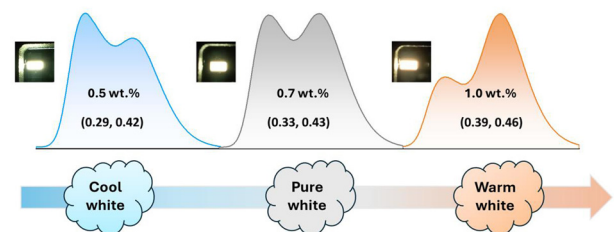
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Combining machine-learning models with first-principles high-throughput calculations to accelerate the search for promising thermoelectric materials

Tao Fan* and Artem R. Oganov

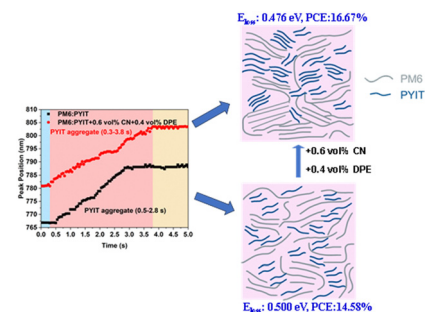
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Tunable color-stable hybrid white OLEDs by combining fluorescent and TADF emitters in a single emissive layer

Upasana Deori, Thamodharan Viswanathan, Nisha Yadav and Pachaiyappan Rajamalli*

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Enhancing molecular aggregation and decreasing the optical gap by a dual-additive to reduce the energy loss of all-polymer organic solar cells

Jiaqi Pan, Qiang Zhang, Jian Guan, Hanyue Gao, Luzhuo Li, Rui Zhang, Hongxiang Li, Xinhong Yu and Yanchun Han*

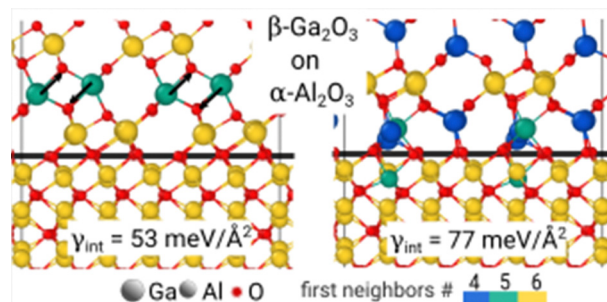


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Interface energies of Ga₂O₃ phases with the sapphire substrate and the phase-locked epitaxy of metastable structures explained

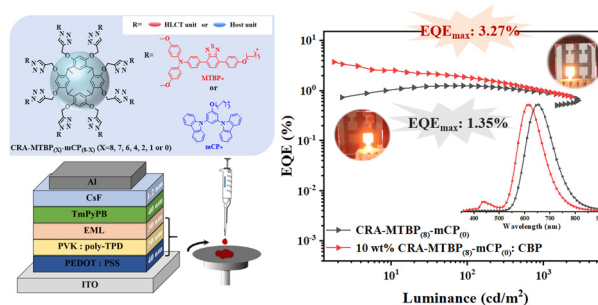
Ilaria Bertoni,* Aldo Ugoletti, Emilio Scalise, Roberto Bergamaschini and Leo Miglio



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Solution-processable benzothiadiazole/triphenylamine-based hybridized local and charge-transfer (HLCT) hyper-structured molecular red emitters for OLEDs

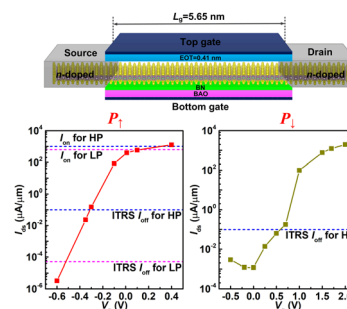
Xiaoyu Yin, Junrong Pu, Chen Ma, Yi Wu, Kunlun Wang, Yingliang Liu, Shaokui Cao, Shi-Jian Su* and Shengang Xu*



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Ferroelectrically gated sub-6 nm monolayer MoS₂ transistors for high-performance and low-power applications

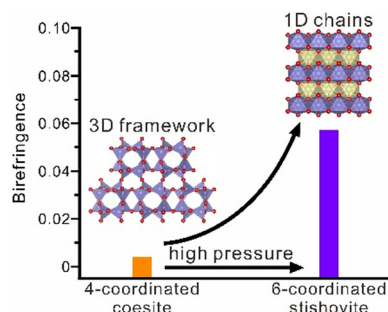
Jin Yuan, Jian-Qing Dai,* Miao-Wei Zhao, Yun-Ya Zhong and Da-Wei Deng



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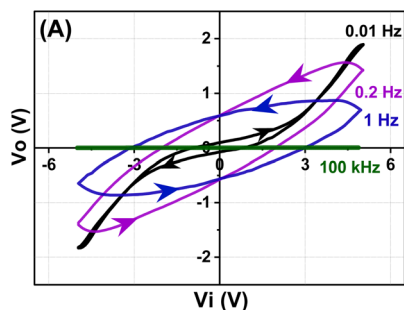
Enhanced optical anisotropy of six-coordinated silica polymorphs via high-pressure hydrothermal treatment

Junwei Li, Yanqiang Li, Weiqi Huang, Takayuki Ishii, Yanhao Lin, Binbin Yue, Sangen Zhao* and Qingyang Hu*



PAPERS

1507



Colossal dielectric permittivity and superparaelectricity in phenyl pyrimidine based liquid crystals

Yuri P. Panarin, Wanhe Jiang, Neelam Yadav, Mudit Sahai, Yumin Tang, Xiangbing Zeng, O. E. Panarina, Georg H. Mehl* and Jagdish K. Vij*

CORRECTION

1519

Correction: Facile synthesis of silicon quantum dots with photoluminescence in the near-ultraviolet to violet region *via* wet oxidation

Yizhou He, Qianxi Hao, Chi Zhang, Qi Wang, Wenxin Zeng, Jiamin Yu, Xue Yang,* Shaorong Li, Xiaowei Guo* and Serguei K. Lazarouk

