

Journal of Materials Chemistry C

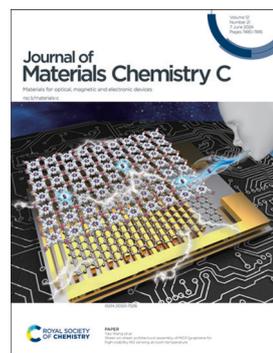
Materials for optical, magnetic and electronic devices

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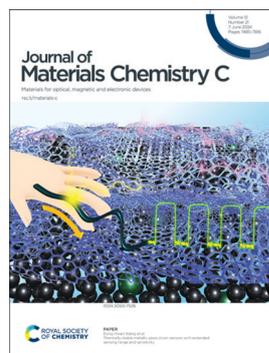
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Inside cover

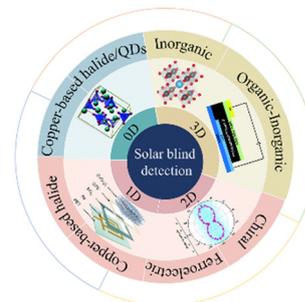
See Dong Hwan Wang *et al.*, pp. 7532–7541. Image reproduced by permission of Dong Hwan Wang from *J. Mater. Chem. C*, 2024, 12, 7532.

REVIEW

7497

Recent progress on solar blind deep ultraviolet photodetectors based on metal halide perovskites

Wanfang Yang, Yutian Lei and Zhiwen Jin*

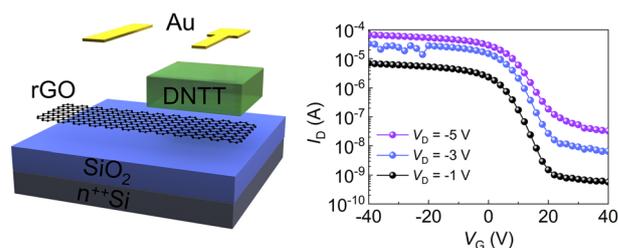


COMMUNICATION

7513

A design strategy for high-performance vertical organic field-effect transistors based on reduced graphene oxide electrodes

Kun Qiao,* Tingfeng Dai and Tao Zou



$$J_{\text{on}} > 134 \text{ mA/cm}^2$$



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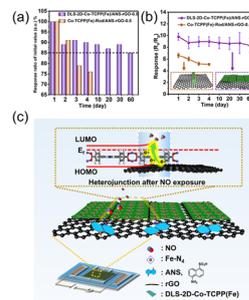
Fundamental questions
Elemental answers



7520

Sheet-on-sheet architectural assembly of MOF/graphene for high-stability NO sensing at room temperature

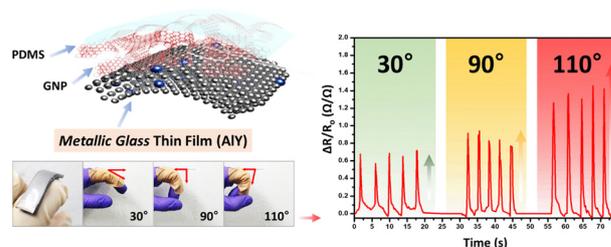
Yanwei Chang, Jingxing Zhang, Ruofei Lu, Weiran Li, Yuchen Feng, Yixun Gao, Haihong Yang, Fengnan Wang, Hao Li, Yi-Kuen Lee, Patrick J. French, Ahmad M. Umar Siddiqui, Yao Wang* and Guofu Zhou



7532

Thermally stable metallic glass strain sensors with extended sensing range and sensitivity

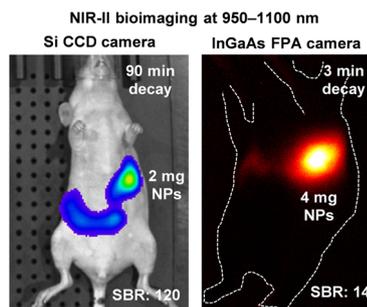
Jae Sang Cho, Woongsik Jang, Keum Hwan Park and Dong Hwan Wang*



7542

Deep-tissue NIR-II bioimaging performance of Si-based and InGaAs-based imaging devices using short-wave infrared persistent luminescence

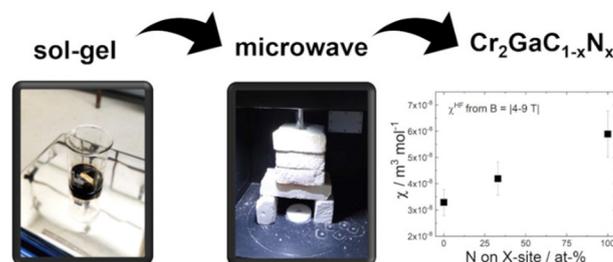
Yafei Chen,* Simona Spinelli and Zhengwei Pan*



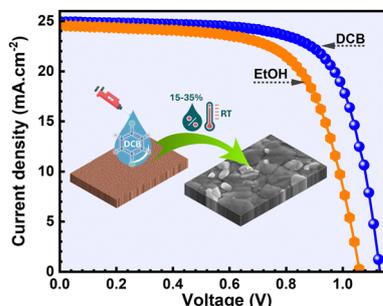
7552

Between carbide and nitride MAX phases: sol-gel assisted synthesis and characterization of the carbonitride phase Cr₂GaC_{1-x}N_x

Niels Kubitzka, Isabel Huck, Hanna Pazniak, Curran Kalha, David Koch, Bo Zhao, Pardeep K. Thakur, Tien-Lin Lee, Aysha A. Riaz, Wolfgang Donner, Hongbin Zhang, Benjamin Moss, Ulf Wiedwald, Anna Regoutz and Christina S. Birkel*



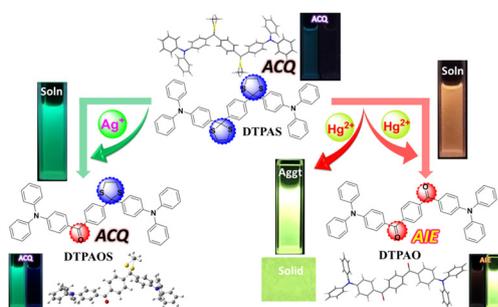
7562



Anti-solvent engineering enables efficient ambient-processed halide perovskite solar cells

Ivy M. Asuo,* Arezo Mahdavi Varposhti, Enrique D. Gomez and Nutifafa Y. Doumon*

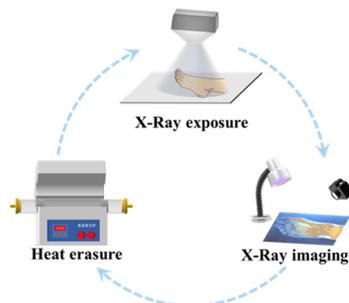
7572



A novel fluorescent chemosensor enables dual-channel selective “turn-on” detection of Hg²⁺ and Ag⁺ via distinct thiophilic effects, essential mechanisms, and excellent sensing performance for mercury(II) in aggregated states

Zhijun Ruan,* Xinyi Dong, Tao Long,* Shanshan Liu, Yanmei Chen and Junqi Lin*

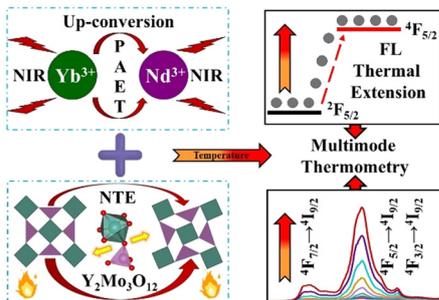
7580



Valence regulation in europium-doped fluoride phosphor for high-resolution X-ray time-lapse imaging

Jian Zhang, Xin Li, Wei Zeng, Daiyuan Liu, Lan Lu, Heng Dai, Junheng Yuan, Jianxiong Shao, Zhichao Liu, Jie Yu* and Xuhui Xu

7588



Thermally enhanced NIR up-conversion fluorescence multimode thermometry based on Y₂Mo₃O₁₂:Nd³⁺,Yb³⁺

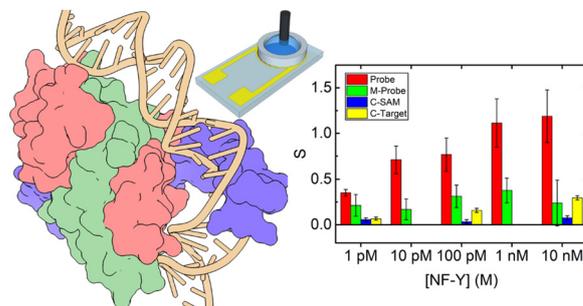
Yexuan Zhang, Minkun Jin, Wang Chen, Ziyang Wu, Zexun Li and Chongfeng Guo*



7596

Investigation of transcription factor–DNA binding with electrolyte-gated organic transistors

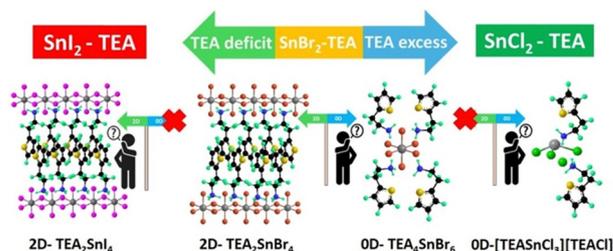
Matteo Sensi,* Andrea Ricci, Giovanna Rigillo, Alessandro Paradisi, Marcello Berto, Nerina Gnesutta, Carol Imbriano, Fabio Biscarini and Carlo Augusto Bortolotti



7605

Chemically driven dimensionality modulation of hybrid tin(II) halide perovskite microcrystals

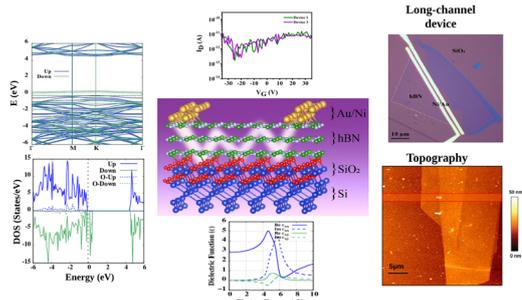
Raúl I. Sánchez-Alarcón, Omar E. Solís, María Cristina Momblona-Rincon, Teresa S. Ripolles,* Juan P. Martínez-Pastor, Rafael Abargues* and Pablo P. Boix*



7615

Current-in-plane tunneling measurement of oxygen-functionalized few-layer boron nitride lateral barriers

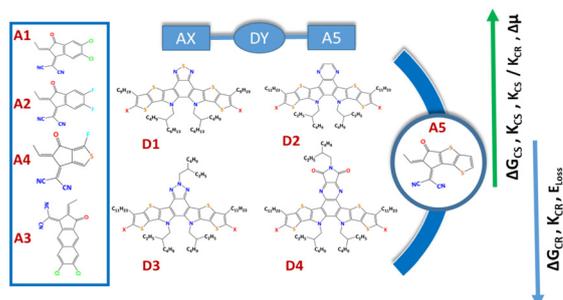
Ziba Torkashvand, Kavos Mirabbaszadeh,* Farzaneh Shayeganfar,* Pawan Kumar Srivastava, Changgu Lee and Mohadesse Beigtan



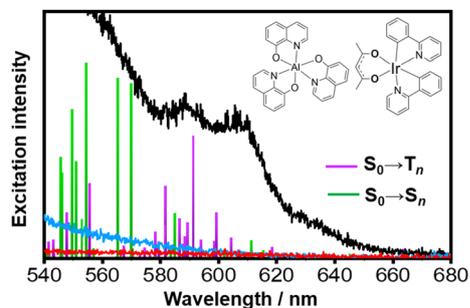
7627

Unveiling symmetry: a comparative analysis of asymmetric and symmetric non-fullerene acceptors in organic solar cells

Rudranarayan Khatua and Anirban Mondal*



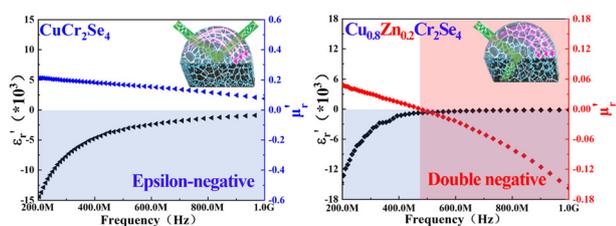
7637



Crystalline confinement leads to broadening of absorption spectra through activated spin-forbidden transitions in Alq₃-Irppy₂acac engineered crystals

Yufang Nie, Heming Zhang,* Jiakuan Wang, Lianbao Ke, Semion K. Saikin,* Hai Bi, Wangqiao Chen and Guofu Zhou*

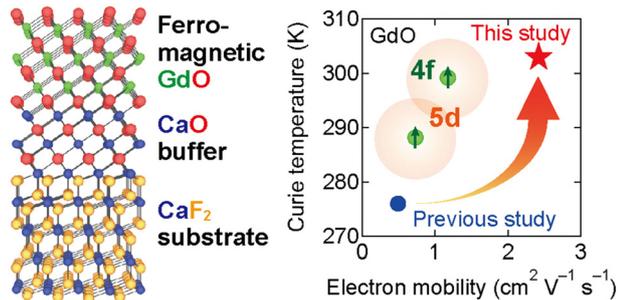
7644



Modified Lossy epsilon-negative CuCr₂Se₄ toward single-phase metamaterials with double negative parameters via Zn doping

Zechao Xu, Weiye Lu, Kelan Yan,* Runhua Fan and Ningzhong Bao*

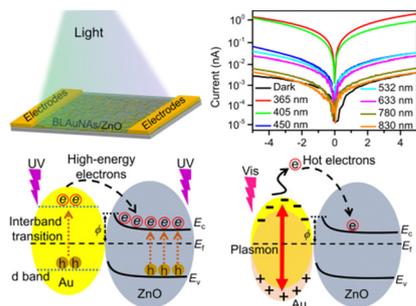
7652



Enhanced Curie temperature near 300 K in highly crystalline GdO epitaxial thin films concomitant with an anomalous Hall effect

Takato Fukasawa, Dai Kutsuzawa, Daichi Oka,* Kenichi Kaminaga, Daichi Saito, Hirokazu Shimizu, Hiroshi Naganuma and Tomoteru Fukumura*

7658



Heterostructures made from bone-like plasmonic Au nanoantennas and ZnO quantum dots for broadband photodetectors

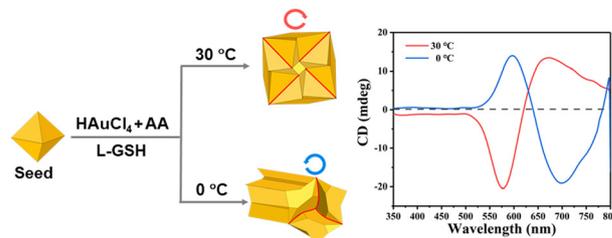
Bingwu Liu, Xi Xie, Yuan Feng, Pu Chen, Dong Li, Huan Cheng, Changjun Min,* Qinglin Zhang* and Jiawen Hu*



7667

Tuning chiral morphology of gold nanoparticles with reversed chiral signals by adjusting the reaction temperature of the seed-mediated growth process

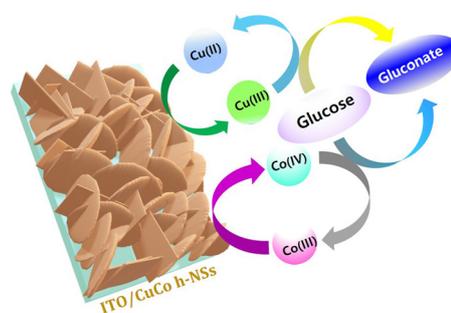
Qingyuan Liu, Miao Zhang, Chunli Xu* and Baoxin Li*



7673

Methionine-assisted electrodeposition of porous copper cobalt bi-metallic hetero-nanostructures on an indium tin oxide electrode: a disposable and stable electrode for non-enzymatic glucose sensing

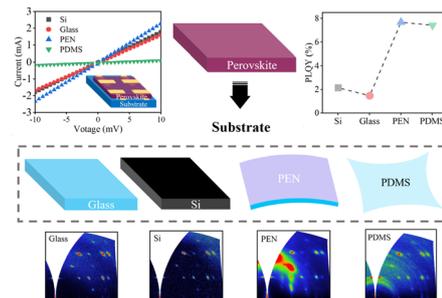
Perumal Viswanathan, Ji Won Kim, Shanmugam Manivannan and Kyuwon Kim*



7684

Substrate effects on structural and optoelectronic properties of quasi-2D perovskite films

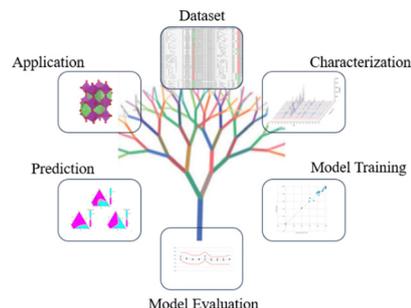
Chenyu Hu, Zhenmei He, Shuo Chen Wang, Lixuan Kan, Sanfeng Lei, Xixiang Zhu, Jinpeng Li, Kai Wang and Haomiao Yu*



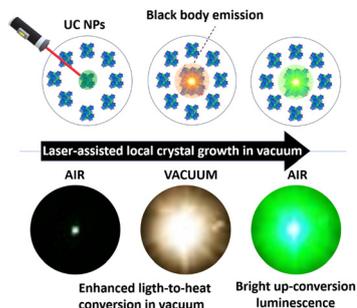
7695

A chemometric approach for the design of lanthanum-based high entropy perovskite oxides

Luca Angelo Betti, Lisa Rita Magnaghi,* Aldo Bosetti, Raffaella Biesuz and Lorenzo Malvasi*



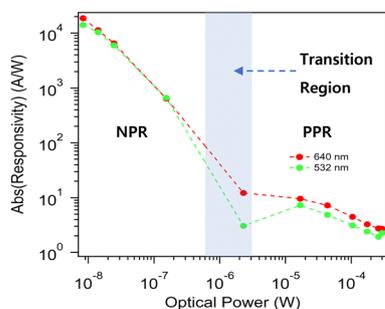
7707



Vacuum-assisted colossal enhancement of up-conversion luminescence of lanthanide-doped nanoparticles upon NIR laser irradiation – a new strategy for phosphor development

Christian Hernández-Álvarez,* Kevin Soler-Carracedo, Przemysław Woźny, Inocencio R. Martín* and Marcin Runowski*

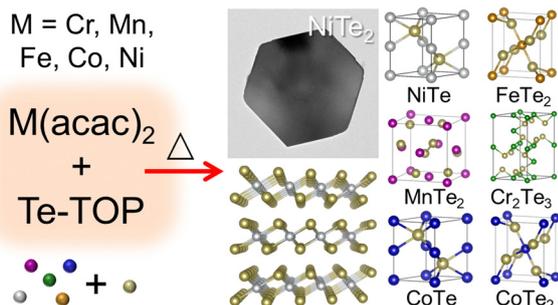
7715



Transition of photoresponsivity in graphene-insulator-silicon photodetectors

Hong-Ki Park and Jaewu Choi*

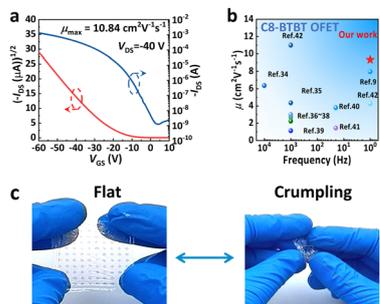
7725



General synthesis of magnetic binary transition metal telluride nanocrystals

Jingxia Wang, Bin Wang, Yifen Wang, Ruixia Yang, Lanfang Wang, Fang Wang, Xiaohong Xu and Yang Liu*

7732



Antisolvent polysulfone dielectric for ultrastable solution-processed high-performance conformal organic transistor array

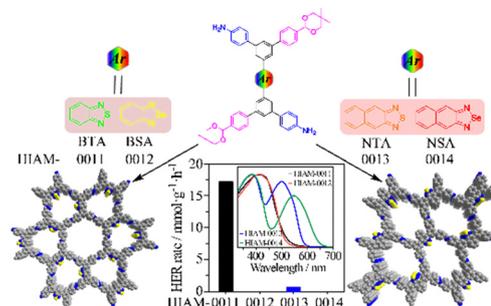
Mingxin Zhang, Mengqiao Du, Yanhong Tong,*
Xue Wang, Jing Sun, Shanlei Guo, Xiaoli Zhao,
Qingxin Tang* and Yichun Liu



7741

Facile synthesis of benzothiadiazole and its derivative-based covalent organic frameworks using "two-in-one" monomers for photocatalytic hydrogen generation

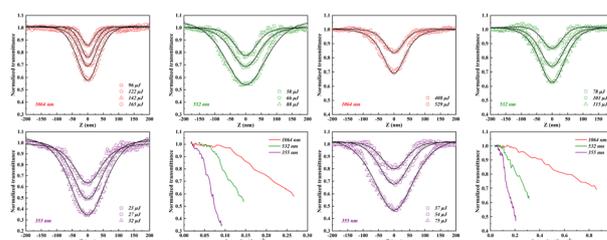
Jia-Xin Guo, Ze-Yang Wang, Chao-Qin Han, Shuai Sun, Lei Wang,* Gonghao Lu* and Xiao-Yuan Liu*



7748

2D Ta₄AlC₃ and Ta₄C₃ nanosheets with excellent ultraviolet optical limiting behavior for laser protection

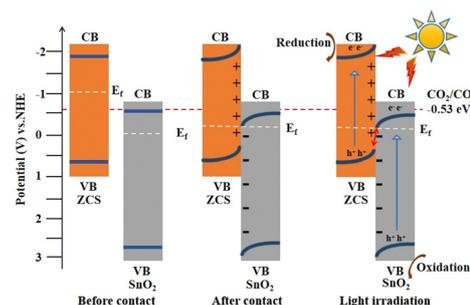
Binjian Du, Zhenyu Zhao, Zihan Ren, Qianhou Liu and Fang Zhang*



7759

Construction of a Zn_{0.65}Cd_{0.35}S/SnO₂ S-scheme heterojunction for efficient photocatalytic CO₂ reduction

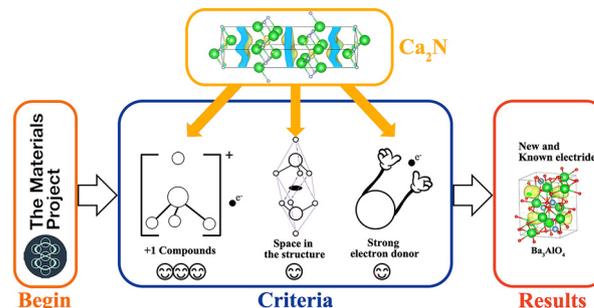
Tao Li, Xiong He, Junhao Wu, Guangyu Pan, Dandan Wang, Fan Zhang, Limin Gao,* Haiquan Xie and Kui Li*



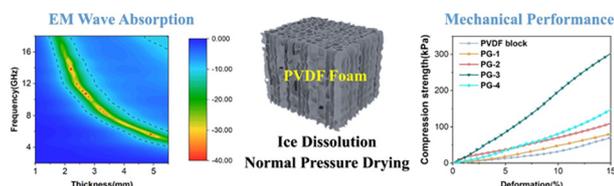
7766

Assessing the design rules of electriles

Zhikun Yao, Yanzhen Zhao, Wenjun Zhang and Lee A. Burton*



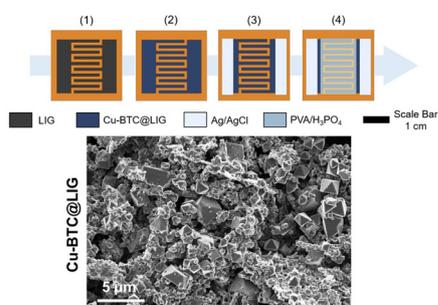
7775



Enhanced electromagnetic wave absorption and mechanical performances of graphite nanosheet/PVDF foams *via* ice dissolution and normal pressure drying

Xiaogang Su,* Yu Zhang, Jun Wang and Yaqing Liu*

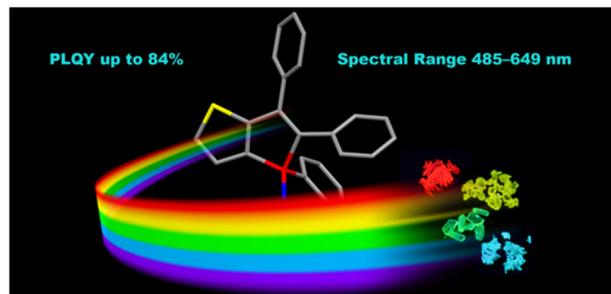
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Simple fabrication of laser-induced graphene functionalized with a copper-based metal-organic framework and its application in solid-state supercapacitors

Samuel Morales-Cámara, Victor Toral, Iñigo J. Vitorica-Yrezabal, Almudena Rivadeneyra, Luis Pereira, Sara Rojas and Francisco J. Romero*

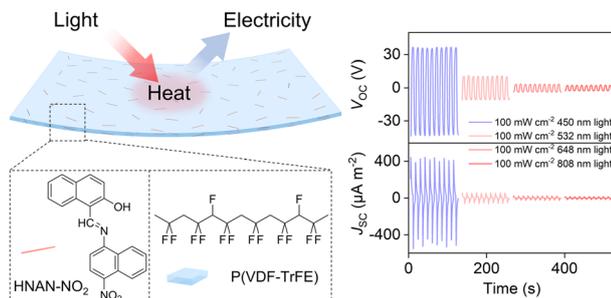
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Thieno[3,2-*b*]phosphole-based AIEgens: facile preparation and dual modulation of solid-state luminescence

Nils König, Justin Mahnke, Yokari Godínez-Loyola, Hendrik Weiske, Julian Appel, Peter Lönnecke, Cristian A. Strasser* and Evamarie Hey-Hawkins*

7807



Schiff base organic molecular crystals/ferroelectric polymer composite for photo-pyroelectric conversion

Zhaopeng Wang, Jie Liu and Baojin Chu*

