

# Journal of Materials Chemistry C

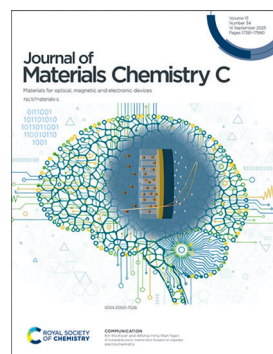
Materials for optical, magnetic and electronic devices

[rsc.li/materials-c](https://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 13(34) 17381-17980 (2025)



### Cover

See Kin Wa Kwan and Alfonso Hing Wan Ngan, pp. 17537–17543. Image reproduced by permission of Kin Wa Kwan from *J. Mater. Chem. C*, 2025, **13**, 17537. Background of the artwork created using Google Gemini.

## REVIEWS

17396

### Fiber electronics for wearable interactive systems

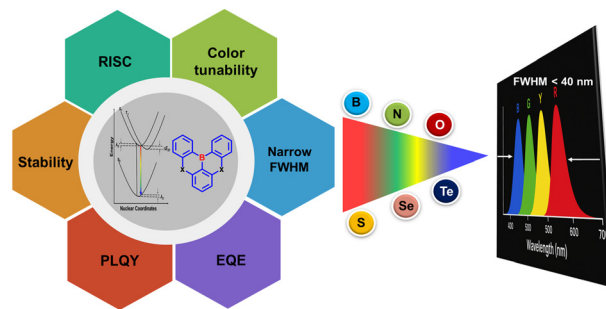
Xiaowen Bai, Meifang Zhu and Shaowu Pan\*



17416

### A guide to mastering multi-resonance thermally activated delayed fluorescence: from challenges to strategies for high-performance OLEDs

P. Keerthika, Venkatramaiah Nutalapati\* and Rajendra Kumar Konidena\*



**GOLD  
OPEN  
ACCESS**

# EES Batteries

**Exceptional research on  
batteries and energy storage**

**Part of the EES family**



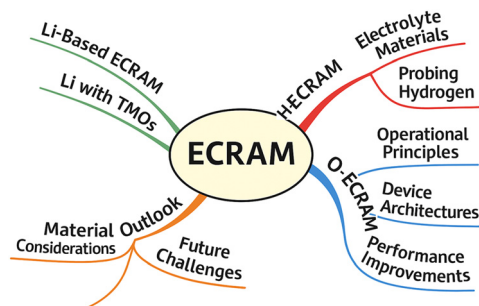
**Join  
in** | Publish with us  
[rsc.li/EESBatteries](https://rsc.li/EESBatteries)

## REVIEWS

17458

### Trends in hydrogen-, lithium- and oxygen-based electrochemical RAM: materials, mechanisms, and applications

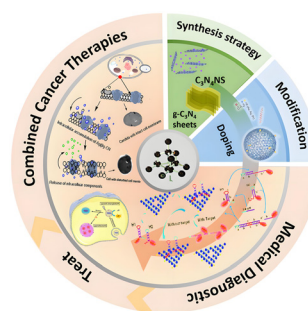
Maria Mukhtar,\* Muhammad Junaid Sultan, Usman Ali and Sang Yeol Lee\*



17483

### Graphitic carbon nitride-based materials: applications in medical diagnostics, therapeutics, and combined cancer therapies

Meie Zheng, Wenwen Li, Fei Ma\* and Mingyue Liang

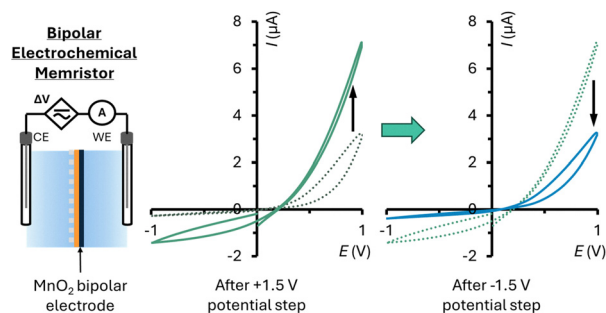


## COMMUNICATIONS

17537

### A tuneable ionic memristor based on bipolar electrochemistry

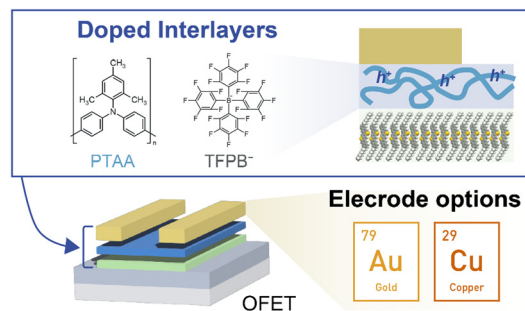
Kin Wa Kwan\* and Alfonso Hing Wan Ngan\*



17544

### Doped interlayers enabling high-mobility p-type organic transistors with copper contact electrodes

Aoi Morimoto, Yu Yamashita,\* Taiki Sawada, Masaki Ishii, Shun Watanabe and Jun Takeya\*

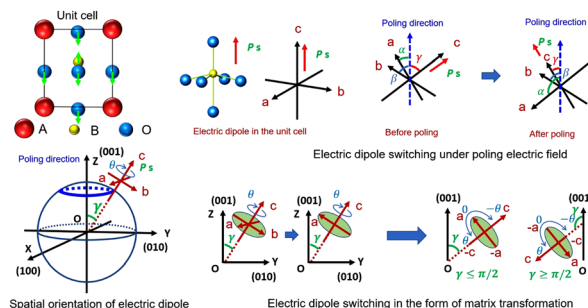




17588

## Ferroelectricity in tetragonal polycrystalline ceramics: matrix transformation of electric dipoles

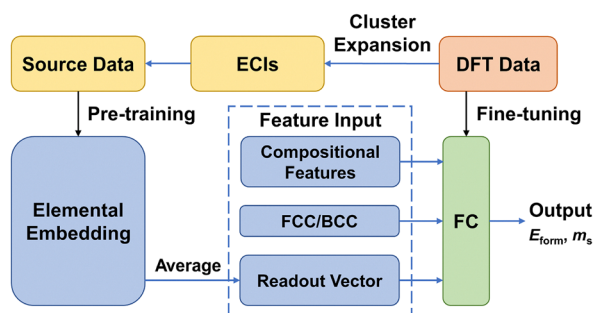
Jingen Wu, Jiacheng Qiao, Yongjun Du, Yiwei Xu, Xin He, Bingfeng Ge, Zhiguang Wang, Zhongqiang Hu,\* Shuxiang Dong and Ming Liu\*



17601

## Cluster expansion augmented transfer learning for property prediction of high-entropy alloys

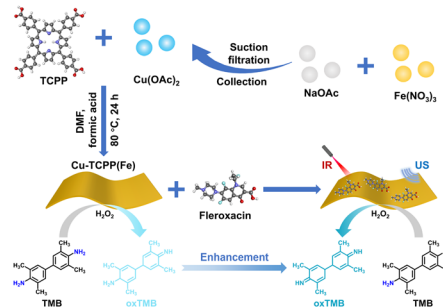
Zimo Li, Nguyen-Dung Tran, Yibo Sun, Yuhang Lu, Cong Hou, Ying Chen and Jun Ni\*



17616

## Development of a colorimetric sensor based on a peroxidase-like Cu,Fe-TCPP metal-organic framework for detection of fleroxacin

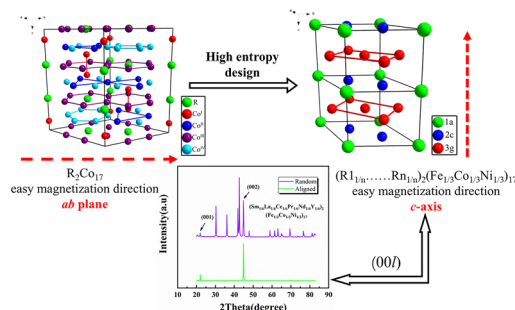
Xin Yao, Xiao Liang, Wenbo Zhao, Jinrong He, Yao Bai\* and Zitao Zhong\*



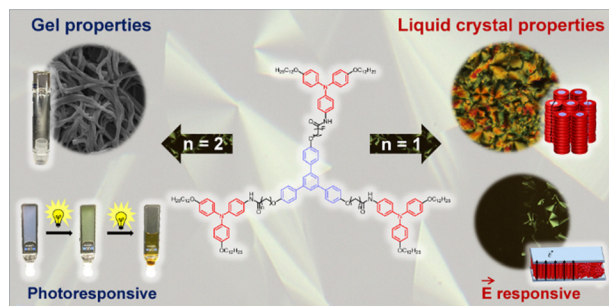
17629

## Disordered structure with $\text{CaCu}_5$ type and uniaxial magneto-crystalline anisotropy induced by the high-entropy cocktail effect in $\text{Sm}_2\text{Co}_{17}$ -based intermetallics

Yichen Feng, Yongquan Guo,\* Boyang Li, Wei Tang, Xinqi Ren, Xinze Wang, Jiwei Liu and Linhan Yin



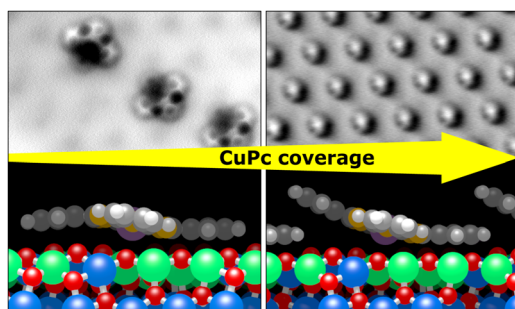
17642



### The role of flexible amide spacers in the self-assembly of star-shaped triphenylbenzenes with photoactive triphenylamine units: stimuli-responsive liquid crystals and gels

Alejandro Martínez-Bueno, Patricia Marín San Román, Raquel Giménez\* and Teresa Sierra\*

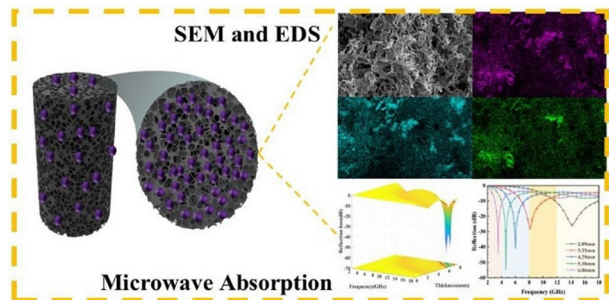
17650



### Molecular arrangements in the first monolayer of Cu-phthalocyanine on $\text{In}_2\text{O}_3(111)$

Matthias A. Blatnik, Fabio Calcinelli, Andreas Jeindl, Moritz Eder, Michael Schmid, Jan Čechal, Ulrike Diebold, Peter Jacobson, Oliver T. Hofmann and Margareta Wagner\*

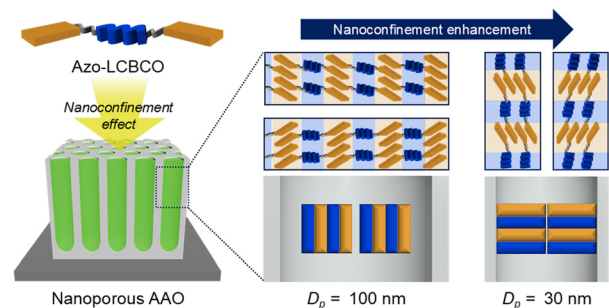
17662



### Controlled self-assembled FeNi alloy/graphene foam composite for lightweight and broadband microwave absorption

Zhen Liu, Bo Wang,\* Shicheng Wei,\* Wei Huang, Yujiang Wang, Yi Liang, Xinyang Wang and Zhengjie Yang

17674



### Nanoconfinement-induced orientation changes in liquid crystalline block co-oligomers

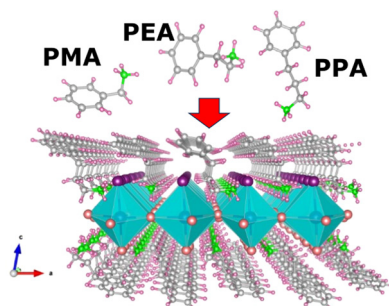
Juyeol Kim, Yujin Kang, Dong-Gue Kang, Hyewon Park, Yeongsik Kim, Chinedum O. Osuji, Hyungju Ahn,\* Changyeon Lee\* and Dong Ki Yoon\*



17682

## Tunable optical and scintillation properties of two-dimensional tin mixed-halide perovskites

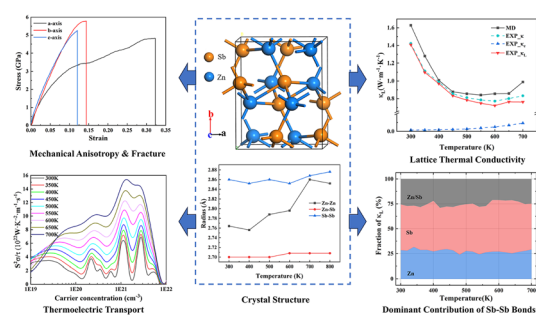
Sri Hartati, Tobias Haposan, Afif Akmal Afkauni, Selvi Anasha, Nelly Safitri Anwari, Resti Marlina, Michal Makowski, Dominik Kowal, Lei Zhang, Marcin Eugeniusz Witkowski, Lina Jaya Diguna, Muhammad Haris Mahyuddin, Winićjusz Drozdowski, Arramel Arramel\* and Muhammad Danang Birowosuto\*



17692

## Multiscale simulation study on the mechanical, electrical, and thermal properties of ZnSb semiconductor

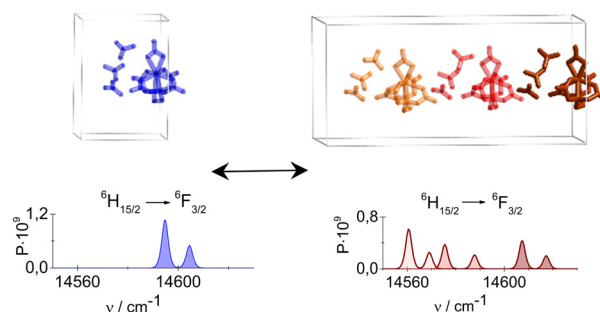
Shihui Chen, Hanwen Yang, Guang Yang, Minghui Cheng, Zipei Zhang, Zhangfeng Wu\* and Jianping Lin\*



17701

## A structurally elusive phase transition with significant physicochemical consequences – the case of the $[C(NH_2)_3]_3[Dy(EDTA)(CO_3)] \cdot H_2O$ crystal

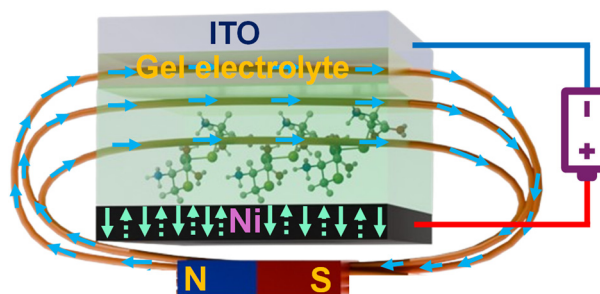
Rafał Janicki,\* Marek Eggen, Andrzej Kędzioński,\* Marcin Ziobro, Magdalena Rok, Maria Korabik and Marek Krośnicki\*



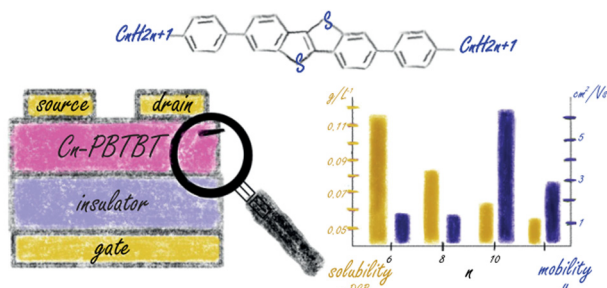
17715

## Magnetic field enhanced charge conduction in paramagnetic nickel(II)–cysteine heterostructures

Manajit Mandal, Abhik Ghoshal, Ankur Malik and Prakash Chandra Mondal\*



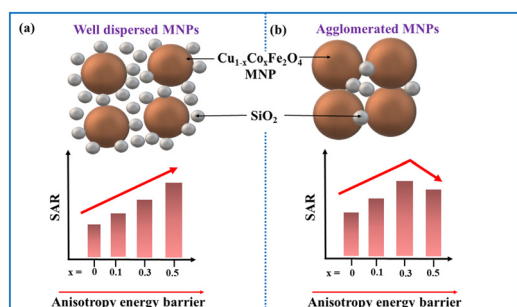
17728



### Impact of alkyl chain length on the thermal, optical and semiconductor properties of the symmetric 4-alkylphenyl derivatives of [1]benzothieno[3,2-*b*]-benzothiophene

Oleg V. Borshchev,\* Roman S. Fedorenko, Ekaterina A. Sorokina, Irina O. Kuchkina, Nikolay M. Surin, Evgeniya A. Svidchenko, Denis V. Anokhin, Ioannis Moutsios, Martin Rosenthal, Dimitri A. Ivanov, Denis A. Vinnik, Dmitry Yu. Paraschuk and Sergey A. Ponomarenko\*

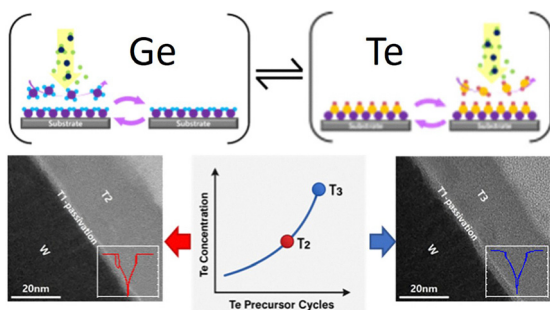
17738



### Synergistic influence of anisotropy and dipolar interactions on the self-heating efficiency of magnetic nanocomposites

Gongtree Phukan, Mritunjoy Prasad Ghosh, Devasish Chowdhury and J. P. Borah\*

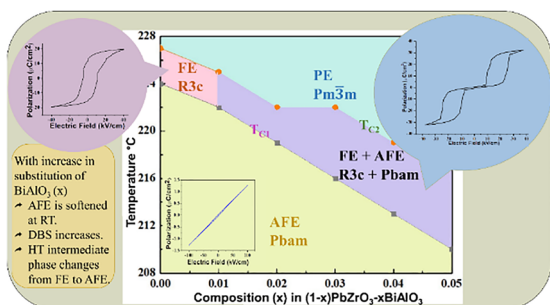
17750



### Composition-controllable growth of $GeTe_x$ thin films via combined atomic layer deposition and chemical vapor deposition

Min Gyoo Cho, Sehwan Jeon, Hyun Wook Kim, Ju Hwan Park, Taeyong Eom and Byung Joon Choi\*

17759



### Effects of $BiAlO_3$ substitution on the structures and properties of antiferroelectric $PbZrO_3$

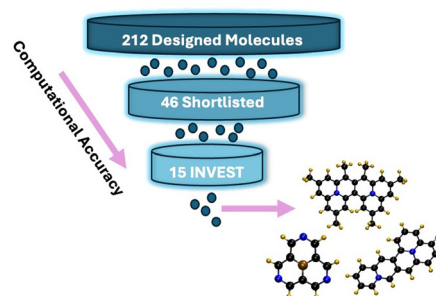
Vidhi Chauhan, Hua Wu and Zuo-Guang Ye\*



17769

## Inverting singlet–triplet gaps by design

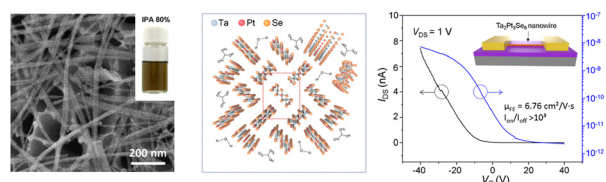
Lucas Rivera Blair and Tahereh Nematiamram\*



17780

A co-solvent exfoliation strategy of quasi-1D electronic grade Ta<sub>2</sub>Pt<sub>3</sub>Se<sub>8</sub> for enhanced yields in non-toxic low boiling point solvents

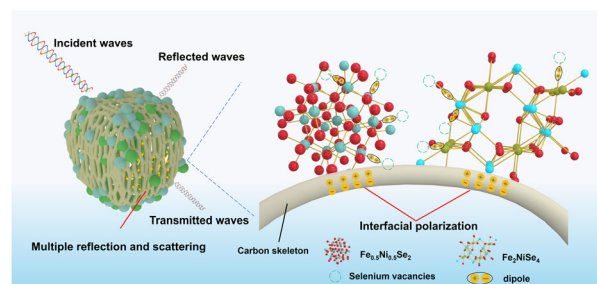
Kyung Hwan Choi, Dahoon Kim, Jinsu Kang, Chaeheon Woo, Xiaojie Zhang, Yeong Hyeop Kim, Yeongjin Kim, Hyeon-Seok Bang, Kyung In Kim, Jeong Su Park, Seyoung Jang, Jongwha Chang, Hyung-Suk Oh, Jae-Hyun Lee, Hak Ki Yu\* and Jae-Young Choi\*



17788

## Engineered heterointerfaces and defects in the PBA-derived NiFeSe@C nanocomposite for high-efficiency electromagnetic wave absorption

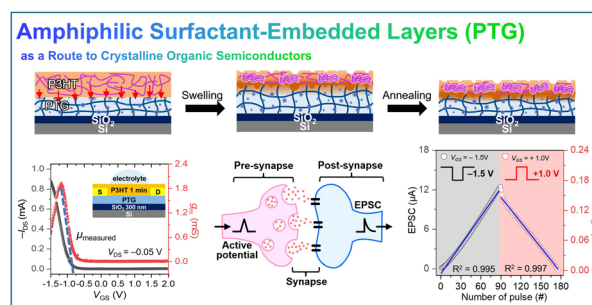
Yihang Yang, Gaoyuan Yu, Yan Chen, Yu Chen, Zhilong Xu, Rui Chao, Gaofeng Shao\* and Xiaogu Huang



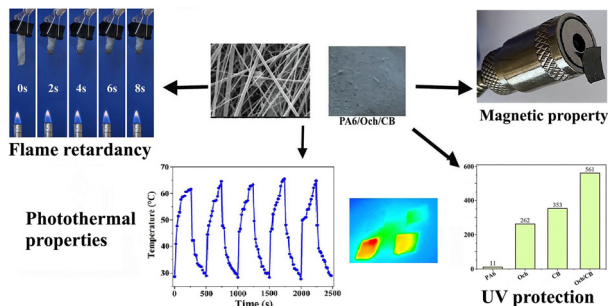
17801

## Kinetic swelling-driven PTG interlayers for enhanced crystallinity and charge transport in polymer OECTs

Jeong Hye Song, Yonghee Kim, Hocheon Yoo and Eun Kwang Lee\*



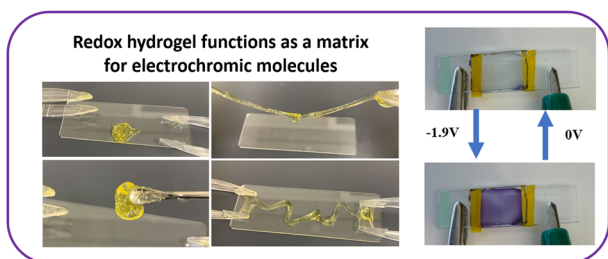
17813



### Multifunctional electrospun polyamide 6/ochre/carbon black nanofibers for UV protection, flame retardancy, and photothermal antibacterial applications

Samira Rezaei Barzani, Komeil Nasouri,\* Mansoor Mandegari and Seyed Amir Hossein Jalali

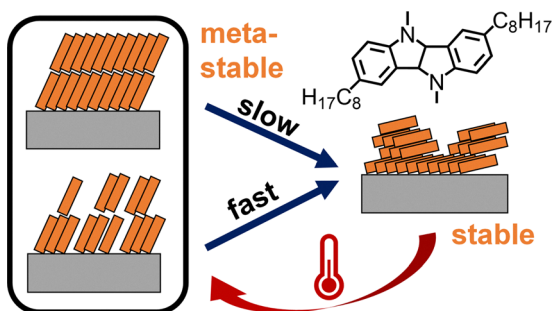
17830



### Electrochemical properties of a ferrocene-containing poly(vinyl alcohol)-based redox hydrogel and its application as a matrix for electrochromic devices

Yutaka Ohsedo\* and Riri Eguchi

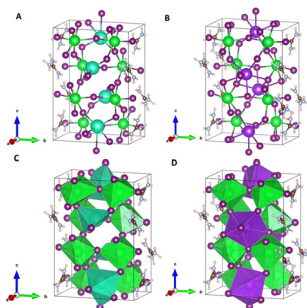
17838



### Fast, slow and reverse polymorph transformations in thin films of a 5,10-dihydroindolo[3,2-b]indole derivative

Niklas J. Herrmann, Oleksandra Korychenska, Ngoc Phi Ta, Guy E. Mayneord, Xabier Rodriguez-Martinez, Daniel T. W. Toolan, Craig C. Robertson, Ahmed Iraqi, Jenny Clark\* and Jana Zaumseil\*

17849



### Computational design of GUA<sub>0.5</sub>X<sub>0.5</sub>SrI<sub>3</sub> (X = Cs, K) perovskites: exploring the potential for optoelectronic applications

Bitra Farhadi, Baseerat Bibi, Jingjing Zhang, Mohammad Amin Pourzandi and Seyedeh Mozghan Seyed-Talebi\*

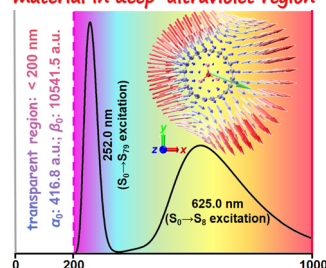


17862

### Obtaining excellent optical molecules by screening superalkali-doped cyclo[2n]carbons, $M_3O@C_{2n}$ ( $M = Li, Na, \text{ and } K, n = 5-10$ )

Wenwen Zhao, Jiaojiao Wang, Xiufen Yan, Tian Lu\* and Zeyu Liu\*

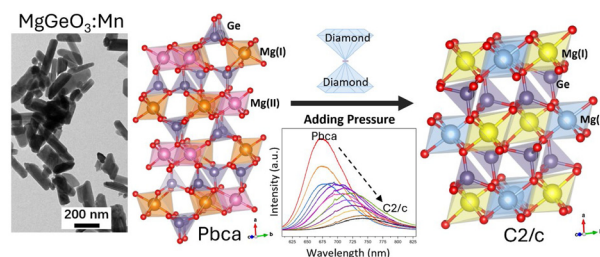
*Li<sub>3</sub>O@C<sub>20</sub> as a promising NLO material in deep-ultraviolet region*



17872

### Pressure-mediated structural evolution and luminescent properties of $MgGeO_3:Mn^{2+}$ nanoparticles: a new candidate for optical high-pressure sensors

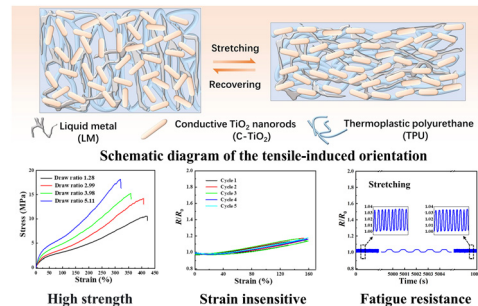
Yihong Liu, Jingyan Liu, Xiaoran Chen, Aditya Kutty, Shanheng Yin, Lijia Liu\* and Yang Song\*



17882

### Mechanically robust liquid metal fibers with strain-insensitive conductivity

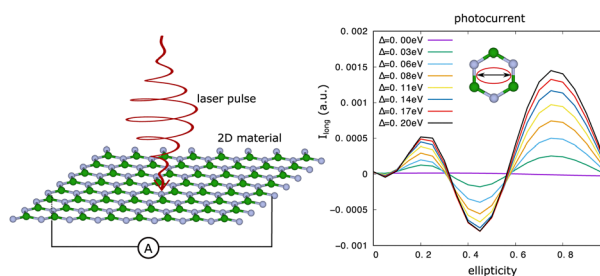
Sitong Hou, Hongyang Zhao, Qian Xu, Da Liu, Gaoling Jin, Yiming Xu, Jiye Wang, Minxuan Kuang\* and Xiuqin Zhang



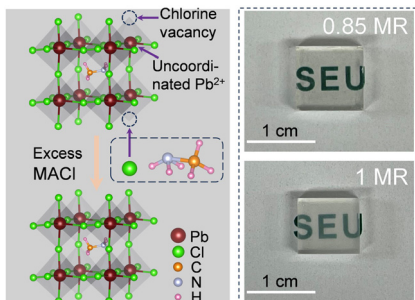
17893

### Bulk photogalvanic current control and gap spectroscopy in 2D hexagonal materials

Anna Galler\* and Ofer Neufeld\*



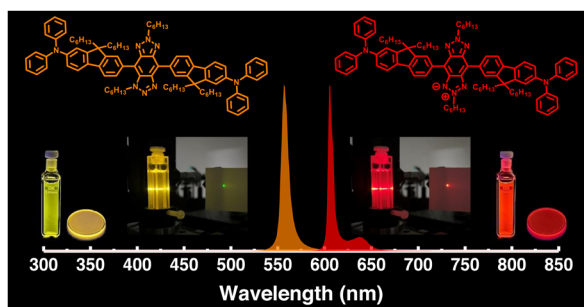
17902



### Precursor engineering for controlled self-doping and enhanced performance in MAPbCl<sub>3</sub> single crystals

Shilin Liu, Jixi Zhou, Yijing Ding, Xianyu Zhao, Qing Li\* and Zhong Wu\*

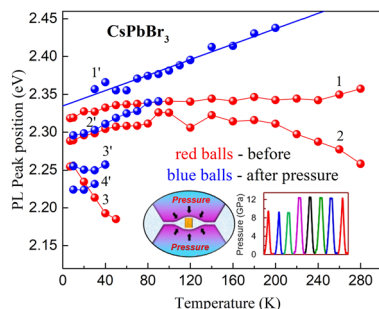
17910



### Regioisomeric donor–acceptor–donor chromophores derived from functionalized fluorene and benzo[1,2-*d*:4,5-*d'*]bis[1,2,3]triazole units as potential organic laser materials

Tzu-Chau Lin,\* Chen-Yu Chang, Yun-Yi Kao, Shu-Tse Cho, Qian-Wen Guo, Po-Han Chen, Jui-Fen Chang,\* Yun-Tzu Tseng, Yuan Jay Chang\* and Wei-Tao Peng\*

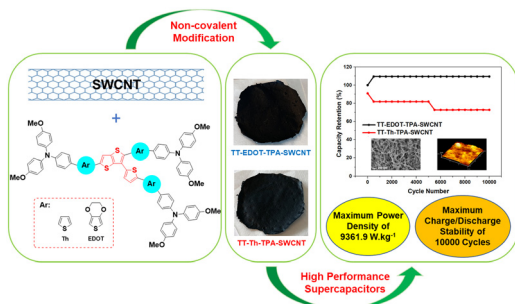
17921



### Changes in near-bandgap photoluminescence in lead halide CsPbBr<sub>3</sub> perovskite subjected to extreme conditions

Irina V. Zhevstovskikh,\* Maksim N. Sarychev, Igor V. Korobeinikov, Sergey V. Ovsyannikov, Olga I. Semenova, Taisiya S. Sukhikh and Natalia V. Morozova

17933



### Thienothiophene and single-wall carbon nanotube-based hybrid materials: design, photophysical properties and the construction of high-performance supercapacitors

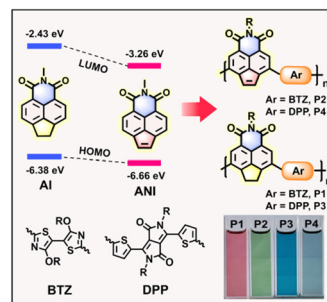
Esra Sahin, Recep Isci,\* Koray Bahadir Donmez, Zehra Cobandede, Mehmet S. Eroglu and Turan Ozturk\*



17949

### Conjugated polymers from acenaphthene imide and acenaphthylene imide: significant modulation of optoelectronic properties by different fused-pentagon rings

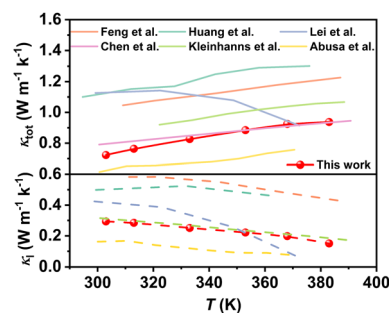
Miaoli Liao, Zeng Wu, Liping Zheng,\* Jiaxin Lan, Ke Yan, Yan Zhao\* and Huajie Chen\*



17961

### Engineering Ag<sub>2</sub>Se thermoelectrics via amorphous nano-Si<sub>3</sub>N<sub>4</sub>: a dual-functional strategy for enhanced zT and mechanical strength

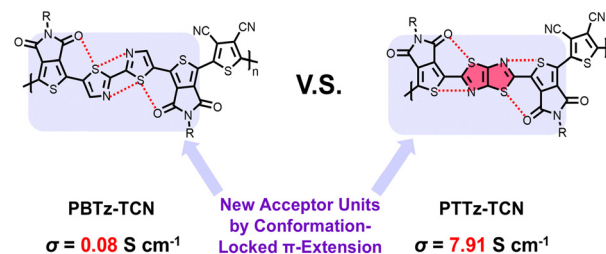
Liedong Zhao, Hailan Zhang, Jiaqi Dong, Guangxu Zhang, Qian Cao, Zhihai Ding, Shufang Wang, Jianglong Wang\* and Zhiliang Li\*



17970

### n-Type polymer semiconductors based on conformation-locked $\pi$ -extended bithieno-[3,4-c]pyrrole-4,6-dione (BTPD) acceptor units for organic thermoelectrics

Yulin Huang, Guanyu Xiao, Jie Chen, Yongqiang Shi, Ziyue Zhang, Huawei Hu, Dafei Yuan,\* Yifan Yao, Kun Yang\* and Zebing Zeng



> High Backbone Coplanarity > Deep-Lying FMO Levels > Excellent Miscibility with Dopants

