

# Journal of Materials Chemistry C

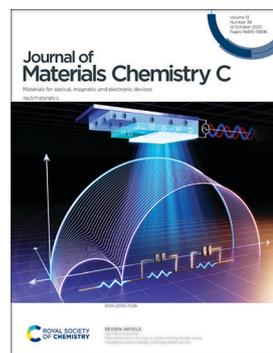
Materials for optical, magnetic and electronic devices

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## IN THIS ISSUE

ISSN 2050-7526 CODEN JMCCCX 13(38) 19493-19896 (2025)



### Cover

See Jae-Hyun Lee *et al.*,  
pp. 19512–19534.  
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Akeem Raji, Jaeyong Park,  
Jonghee Lee and  
Jae-Hyun Lee from  
*J. Mater. Chem. C*,  
2025, **13**, 19512.

## EDITORIAL

19506

An honorary collection for *Journal of Materials Chemistry C* and *Journal of Materials Chemistry B* "in memory of Professor Dr Helmut Ringsdorf"

Dharmendra Pratap Singh,\*  
Ammathnadu Sudhakar Achalkumar,\*  
Matthias Lehmann\* and Sandeep Kumar\*

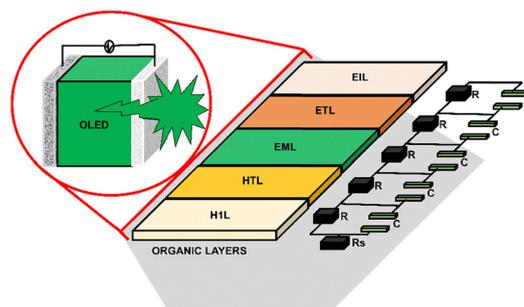


## REVIEWS

19512

Characterization of organic light-emitting diodes using impedance spectroscopy and equivalent circuits

Akeem Raji, Jaeyong Park, Jonghee Lee and Jae-Hyun Lee\*



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# EES Solar

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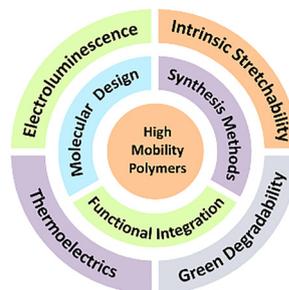
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## REVIEWS

19535

**Multifunctional high-mobility polymer semiconductors: design, synthesis and applications**

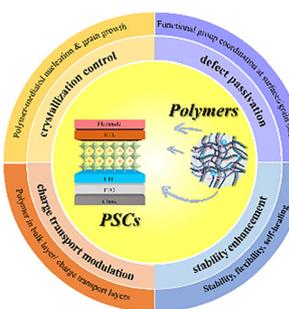
Zihan Xiong, Yunlong Guo\* and Yunqi Liu\*



19552

**Polymer-engineered perovskite solar cells: synergistic strategies for multiscale stability and high-efficiency photovoltaics**

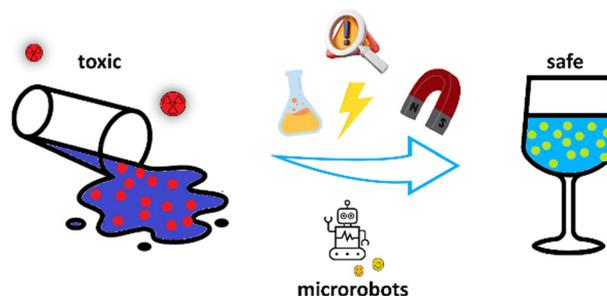
Jingsong Tu, Dengxue Li, Ting Hu\* and Yiwang Chen\*



19576

**Materiomics approaches for stimuli-responsive microrobots**

Silvia Orecchio, Giuseppe Arrabito,\* Claudia Pellerito, Tiziana Fiore, Floriana Campanile, Federica Meringolo, Paola Costanzo, Sebastiano Alberto Fortuna, Salvatore Barreca, Giorgia Puleo, Vittorio Ferrara and Bruno Pignataro\*

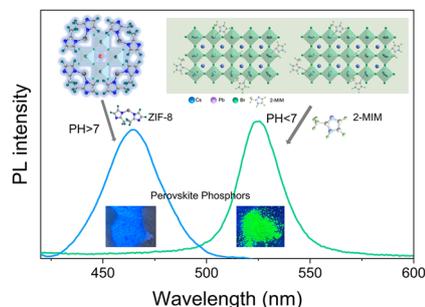


## COMMUNICATIONS

19601

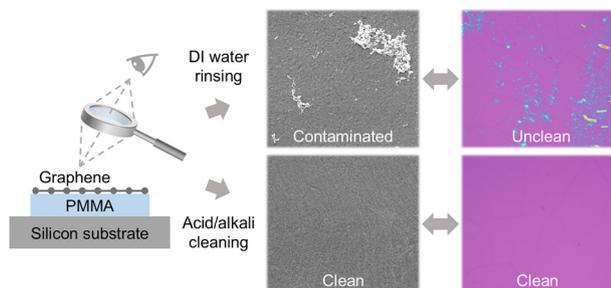
**ZIF-8-assisted aqueous synthesis for highly stable green and blue perovskite phosphors**

Bin Yan, Ziang Wang, Kaiqing Fan, Yunfan Wang, Jianxu Ding, Shaodong Sun, Kunhua Wang,\* Meng Gao\* and Yonghui Song\*



## COMMUNICATIONS

19606

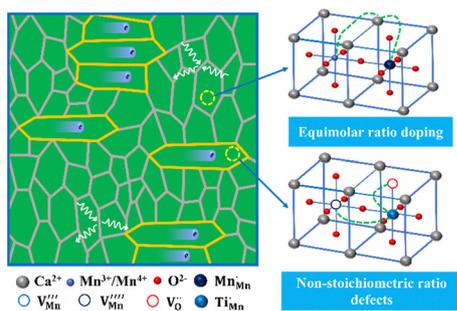


### Revealing key surface contaminants *via* stack-flipping strategy: investigating rinsing protocols for clean graphene transfer and enhanced electrical performance

Hao Liu, Yingzhi Li, Kun Yang, Lei Guo, Zebing Zeng and Yifan Yao\*

## PAPERS

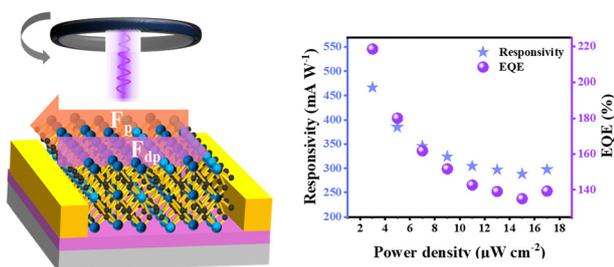
19615



### Atomic-scale B-site deficiency stabilizes enhanced thermoelectric properties of calcium manganese oxides

Zongmo Shi,\* Yuqing Qi, Zhen Han, Yifeng Tang, Qing Wang, Zhiyu Cao, Ying Zhang and Junzhan Zhang

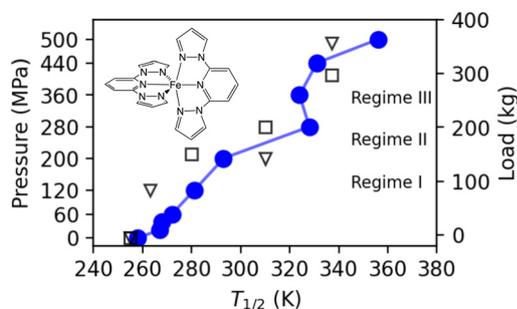
19626



### An ultra-low dark current, high-performance photodetector based on CVD-grown Bi<sub>2</sub>TeO<sub>5</sub>

Yunxiao Min, Jie Liu, Zihan Wang and Liang Li\*

19635



### Atomistic description of spin crossover under pressure and its giant barocaloric effect

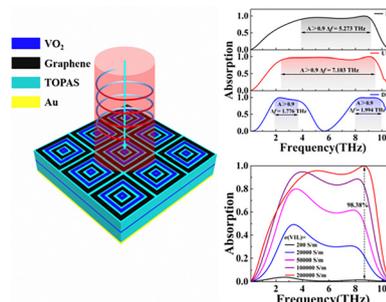
Sergi Vela,\* Jordi Ribas-Arino, Steven P. Vallone, António M. dos Santos, Malcolm A. Halcrow and Karl G. Sandeman



19642

### Design of a switchable and tunable terahertz metamaterial absorber with broadband, ultra-broadband, and dual-broadband absorption based on graphene and vanadium dioxide

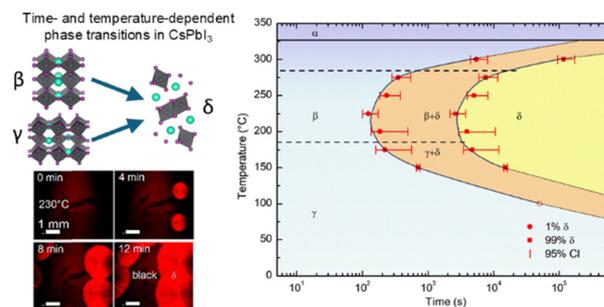
Youqi Zhang, Weijun Zhou, Yongzheng Sun, Xiangfei Yuan, Haipeng Wang, Xiangyang Zhang\* and Ben-Xin Wang\*



19654

### Mapping the polymorphic phase transformations of CsPbI<sub>3</sub> perovskite thin films

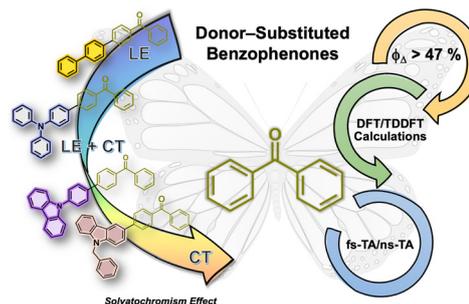
Rudolph Holley III, Quinn C. Burlingame\* and Yueh-Lin Loo\*



19660

### Tuning charge transfer and singlet oxygen generation in donor-substituted benzophenones by structural and solvent effects

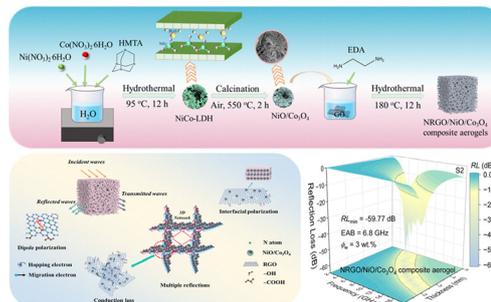
Carla Cunha and J. Sérgio Seixas de Melo\*



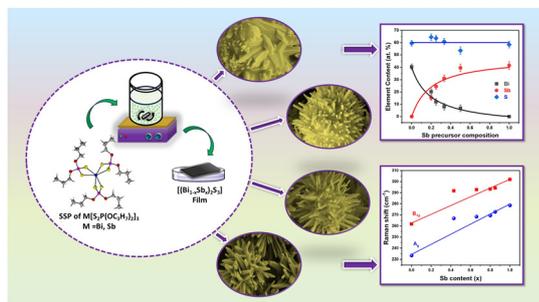
19673

### Synthesis of layered double hydroxide derivative-decorated nitrogen-doped graphene composite aerogels with a unique hierarchical porous network structure for microwave absorption

Ruiwen Shu,\* Chang Wang, Leilei Xu, Yang Guan and Konghu Tian



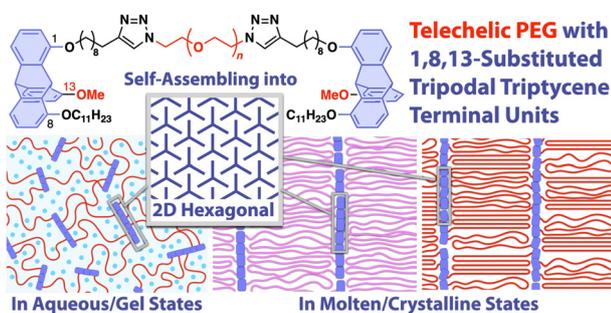
19683



### Low-temperature solution-processed growth of ternary $(\text{Bi}_{1-x}\text{Sb}_x)_2\text{S}_3$ films

Sayali Shrishail Harke, Omesh Kapur, Ruomeng Huang\* and Chitra Gurnani\*

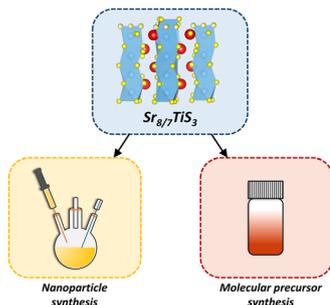
19693



### Self-assembly behaviour of telechelic polyethylene glycol with triptycene termini capable of two-dimensional ordering

Fumitaka Ishiwari\*, Yugen Chen, Tomoya Fukui,\* Takashi Kajitani and Takanori Fukushima\*

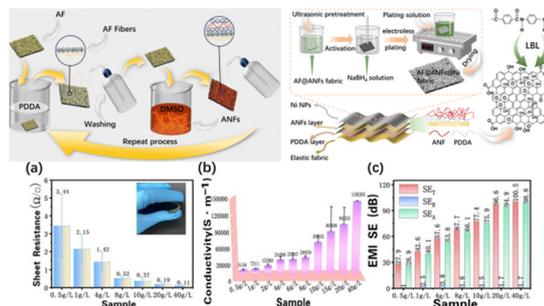
19699



### Moderate-temperature solution-processed synthesis of incommensurate $\text{Sr}_{8/7}\text{TiS}_3$ thin films and rod-shaped nanocrystals

Kiruba Catherine Vincent, Shubhanshu Agarwal, Sofia Rodriguez Perilla, Daniel C Hayes, Kim Kisslinger and Rakesh Agrawal\*

19712



### Lightweight and flexible Ni-deposited aramid fabric for electromagnetic interference shielding

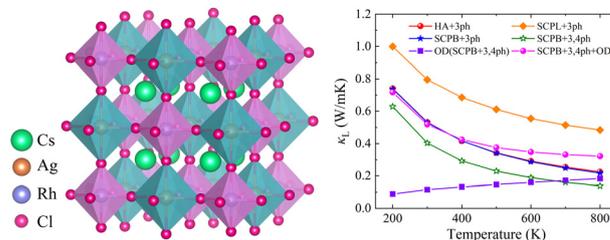
Ying-Kang Li, Wen-Juan Wang, Ya-Juan Cai, Ting Yue, Ke-Xiao Sang, Dan Wu, Ya-Ge Wu, Zi-Hao Yang, Chuan-Zhe Zhao, Jing-Gang Gai\* and Yi-Xing Sun\*



19724

### Ultralow lattice thermal conductivity in double perovskite $\text{Cs}_2\text{AgRhCl}_6$ : the effect of anharmonic phonon renormalization and wave-like phonon tunneling

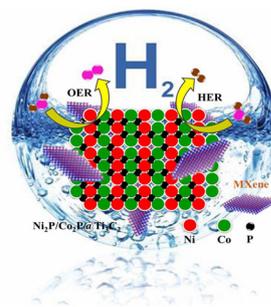
Kunpeng Yuan,\* Xiaoyong Xie, Zhehan Duan, Xiaoliang Zhang, Zhaoliang Wang\* and Dawei Tang



19734

### Synergistic coupling of heterointerface $\text{Ni}_2\text{P}/\text{Co}_2\text{P}$ nanocrystals anchored on MXene nanosheets for high-performance oxygen and hydrogen evolution reactions

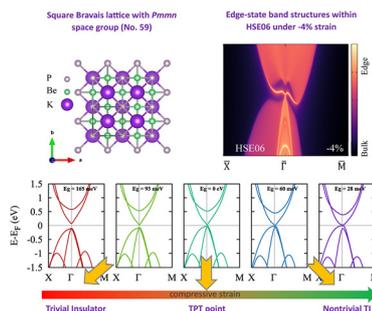
Xuan Wu, Thangavelu Dhanasekaran,\* Wei Han, Zhao Dan, Yuhang Li, Wang Guiling and Zhao Jing\*



19749

### $\text{K}_2\text{Be}_2\text{P}_2$ monolayer: a predicted strain-tunable two-dimensional topological insulator exhibiting multifunctional properties

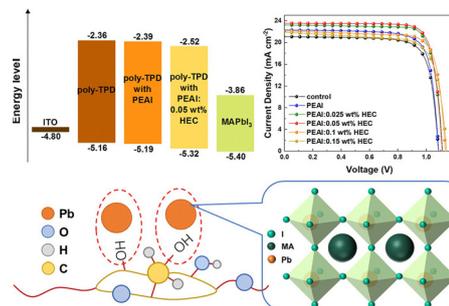
Shahram Yalameha,\* Zahra Nourbakhsh and Javad Zahmatkesh



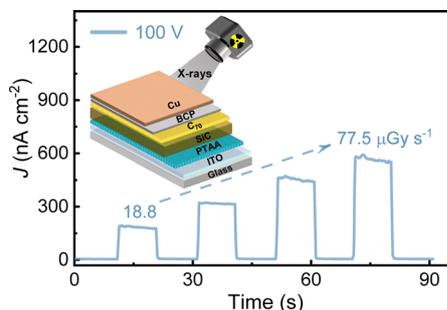
19763

### Multifunctional interface modification to enhance the performance of perovskite solar cells

Yuqing Chen, Qiaoli Niu,\* Junhao Xiong, Tianyu Wang, Wenyi Zhao, Wenjin Zeng, Xinwen Peng, James Ramontja and Ruidong Xia\*



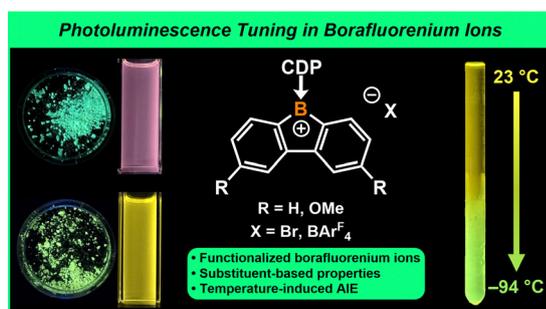
19772



### Semi-insulating 4H-SiC based PIN photodiodes for X-ray detection

Xin Chen, Haitao Tang, Yong Liu and Qianqian Lin\*

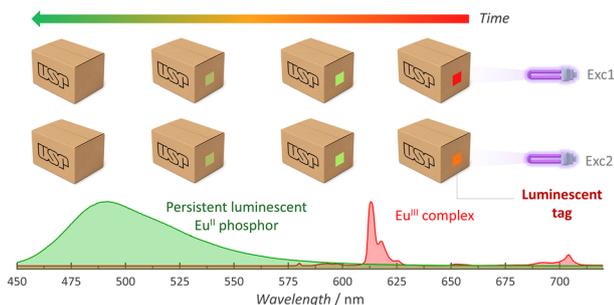
19778



### Harnessing substituent and aggregation-induced effects for color-tunable emission in borafluorenum ions

Nathan C. Frey, Kimberly K. Hollister, Caleb C. Taylor, Nula Jones, Diane A. Dickie and Robert J. Gilliard Jr\*

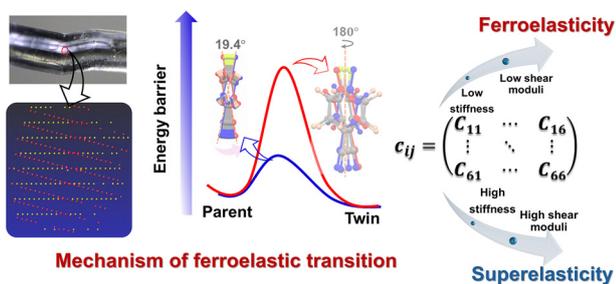
19788



### Dual spectral and temporal encoding in luminescent polymeric films using a Eu<sup>III</sup> complex and a persistent phosphor for anti-counterfeiting applications

Tayne P. Pereira, Felipe S. M. Canisares, João H. de Araujo-Neto, Javier Ellena, Lucas C. V. Rodrigues, Hermi F. Brito and Airtton G. Bispo-Jr\*

19797



### Ferroelasticity versus superelasticity in molecular crystals: the role of weak switchable interaction motifs and low shear moduli

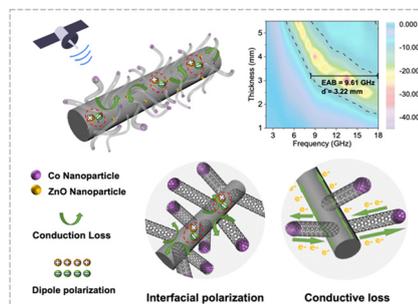
Ravi Teja Malisetty, Atiqur Rahman, Soyal Sabu, Ashi Singh and Sajesh P. Thomas\*



19805

### Fabrication of rod-like porous Co@graphene/CNT composites for superior wideband electromagnetic wave absorption

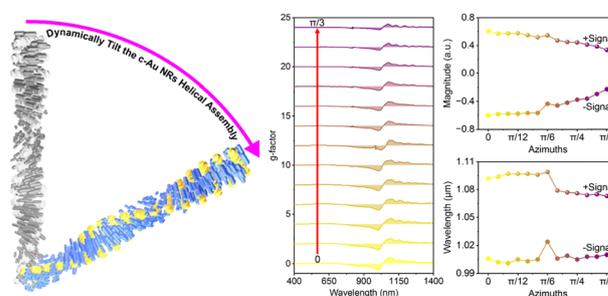
Songyuan Mao, Chang He, Xiao Wang, Hongdu Jin, Zhenjie Liang, Minrui Chen, Hui-Min Wen\* and Jun Hu\*



19816

### Assembly of intrinsic chiral gold nanorods within a cholesteric liquid crystal host with tunable optical asymmetry

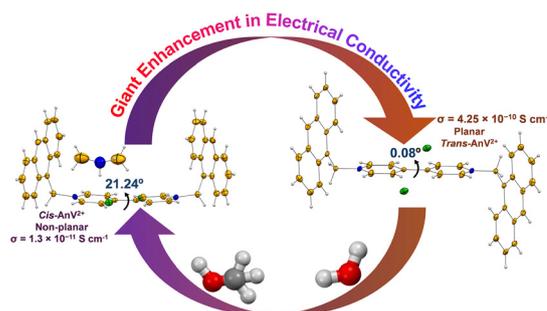
Yang Liu,\* Xiyang Wei, Yongguang Chen, Yi Yang, Yongfang Zhang and Hao Liu



19829

### Stabilizing a *cis* viologen via co-crystal engineering: electric and magnetic fields are in action to confirm no $\pi$ -mer formation

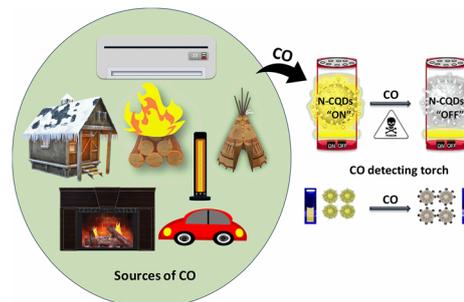
Ranjeev Kumar Parashar, Aditya Kamal, Debashree Manna, Vikram Singh\* and Prakash Chandra Mondal\*



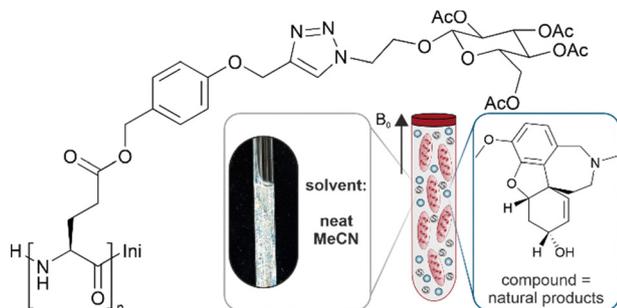
19842

### A CO-detecting torch using carbon nanodots

Shrodha Mondal and Prithidipa Sahoo\*



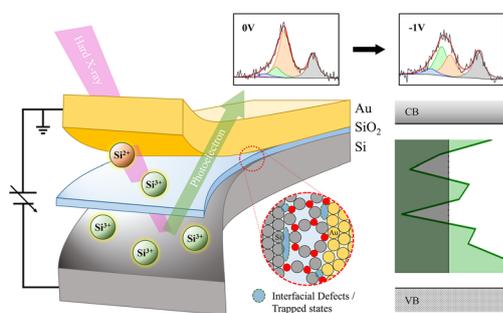
19848



### Sweet side chain: a glycopeptide-based alignment medium to measure residual dipolar couplings in neat acetonitrile

Lukas Laux and Christina M. Thiele\*

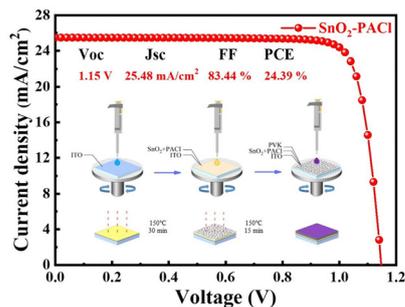
19856



### Quantification of interfacial trap states via bias-applied HAXPES: a chemical-state perspective

Wen-Jen Chen, Yin-Bo Tseng and Hsiu-Wei Cheng\*

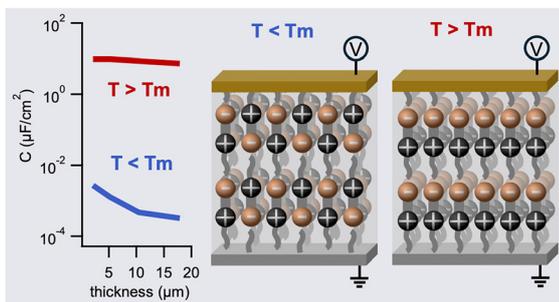
19867



### In situ passivation of the buried interface in perovskite solar cells using a SnO<sub>2</sub>-PACl composite electron transport layer

Yingchen Li, Yinbin Zhu, Hongkun Cai,\* Xiaoguang Luo,\* Qinwen Guo, Jian Su, Tao Hu, Xianwei Zhang, Miao Yan, Juan Li, Jian Ni and Jianjun Zhang\*

19875



### Paraelectric behavior and lamellar ordering in zwitterion-polymer blends

Simranjeet Kaur, Vance E. Williams and Loren G. Kaake\*



## PAPERS

19884

**Temperature-responsive hydrogels with adaptive coloration and superior mechanical performance**

Yi-Zuo Chu, Chien-Yin Lin, You-Sheng Zhang and Mei-Yu Yeh\*



- ✓ outstanding mechanical properties
- ✓ excellent puncture resistance
- ✓ high elongation (>1000%)
- ✓ strong interfacial adhesion

## CORRECTION

19894

**Correction: Emerging microelectronic microneedles (eMN) for biomedical applications**

Shu Zhou, Qian Zhou, Xin Li\* and Bingbing Gao\*

