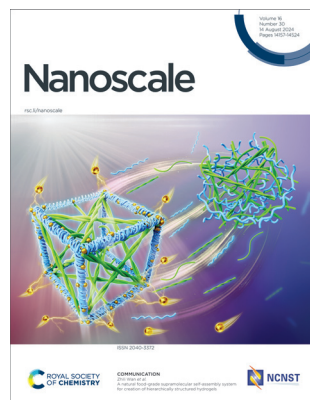


## IN THIS ISSUE

ISSN 2040-3372 CODEN NANOHL 16(30) 14157–14524 (2024)



### Cover

See Zhili Wan *et al.*,  
pp. 14261–14268.

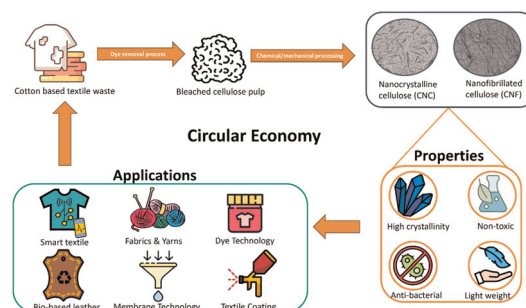
Image reproduced  
by permission of  
Zhili Wan from  
*Nanoscale*,  
2024, **16**, 14261.

## REVIEWS

14168

### Transforming textile waste into nanocellulose for a circular future

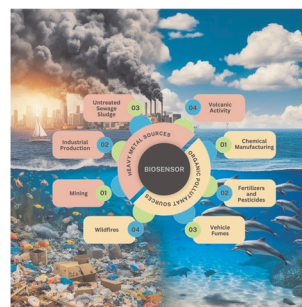
Thenapakiam Sathasivam, Sigit Sugiarto, Michelle Pek Yin Yew, Xin Yi Oh, Siew Yin Chan, Benjamin Qi Yu Chan, Mao Jie Tim and Dan Kai\*



14195

### Sensitive and selective detection of heavy metal ions and organic pollutants with graphene-integrated sensing platforms

Joydip Sengupta\* and Chaudhery Mustansar Hussain\*



# Royal Society of Chemistry approved training courses

Explore your options.  
Develop your skills.  
Discover learning  
that suits you.

**Courses in the classroom,  
the lab, or online**

Find something for every  
stage of your professional  
development. Search our  
database by:

- subject area
- location
- event type
- skill level

Members **get at least 10% off**

Visit [rsc.li/cpd-training](https://rsc.li/cpd-training)



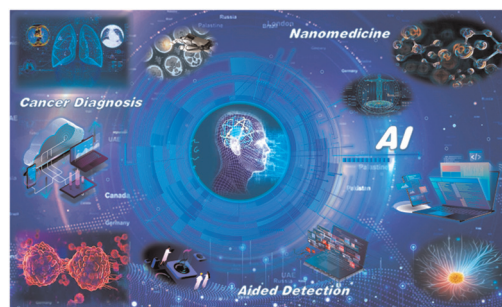
**SAVE  
10%**

## REVIEWS

14213

## Application of artificial intelligence in cancer diagnosis and tumor nanomedicine

Junhao Wang, Guan Liu, Cheng Zhou, Xinyuan Cui, Wei Wang, Jiulin Wang, Yixin Huang, Jinlei Jiang, Zhitao Wang, Zengyi Tang, Amin Zhang\* and Daxiang Cui\*

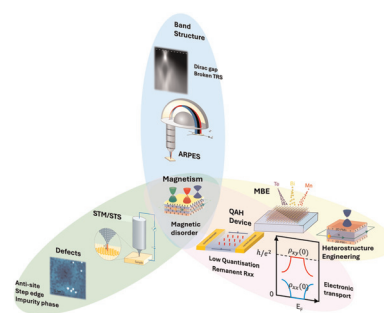


## MINIREVIEW

14247

Recent progress of  $\text{MnBi}_2\text{Te}_4$  epitaxial thin films as a platform for realising the quantum anomalous Hall effect

Qile Li,\* Sung-Kwan Mo and Mark T. Edmonds\*

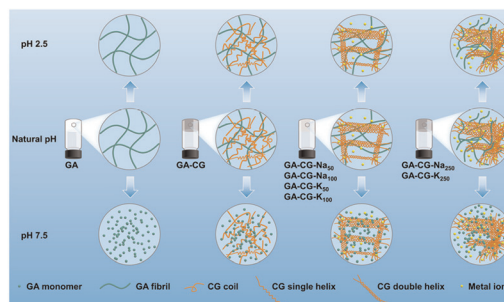


## COMMUNICATIONS

14261

## A natural food-grade supramolecular self-assembly system for creation of hierarchically structured hydrogels

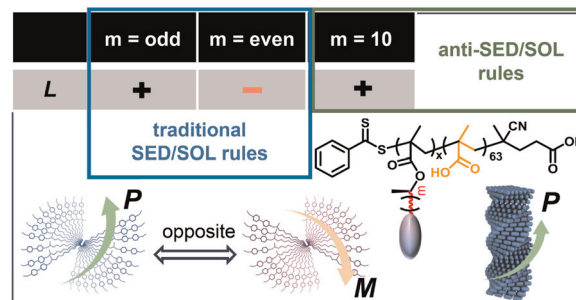
Xinke Yu, Jiyang Cai, Mengyue Xu, Qing Li, Yunyi Yang, Zhili Wan\* and Xiaoquan Yang



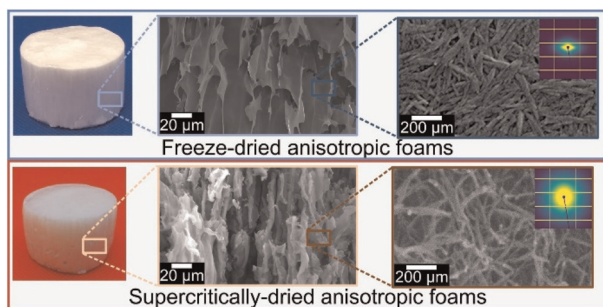
14269

## Odd–even effect in chiral side-chain cyanobiphenyl block copolymer assemblies prepared by polymerization-induced chiral self-assembly

Jiaying Guo, Zeyu Tang, Hongbin Dai, Dongdong Liu,\* Zixiang He, Xiaoxiao Cheng\* and Wei Zhang\*



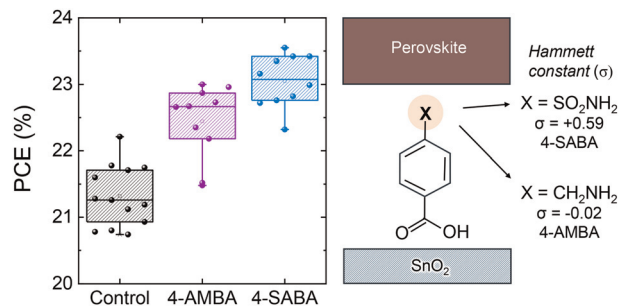
14275



### The influence of drying routes on the properties of anisotropic all-cellulose composite foams from post-consumer cotton clothing

Carina Schiele, Maria-Ximena Ruiz-Caldas, Tingting Wu, Elisabetta Nocerino, Agnes Åhl, Aji P. Mathew, Gustav Nyström,\* Lennart Bergström\* and Varvara Apostolopoulou-Kalkavoura\*

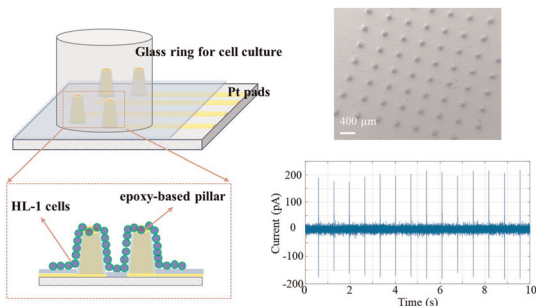
14287



### Effect of the Hammett substituent constant of *para*-substituted benzoic acid on the perovskite/SnO<sub>2</sub> interface passivation in perovskite solar cells

Ki-Nam Hong, Sang-Uk Lee, Chunyang Zhang, Seong-Ho Cho and Nam-Gyu Park\*

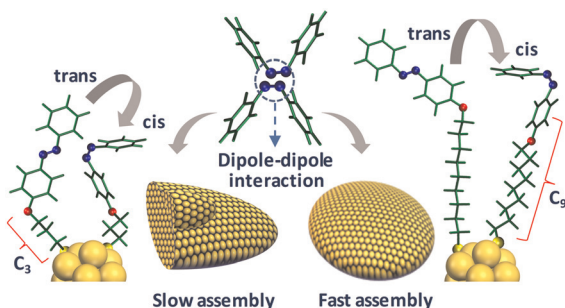
14295



### Laser-patterned epoxy-based 3D microelectrode arrays for extracellular recording

Hu Peng, Inola Kopic, Shivani Ratnakar Potfode, Tetsuhiko F. Teshima,\* George Al Boustani, Lukas Hiendlmeier, Chen Wang, Mian Zahid Hussain, Berna Özkale, Roland A. Fischer and Bernhard Wolfrum\*

14302



### The interplay of chromophore–spacer length in light-induced gold nanocluster self-assembly

Jose V. Rival, Nonappa and Edakkattuparambil Sidharth Shibu\*

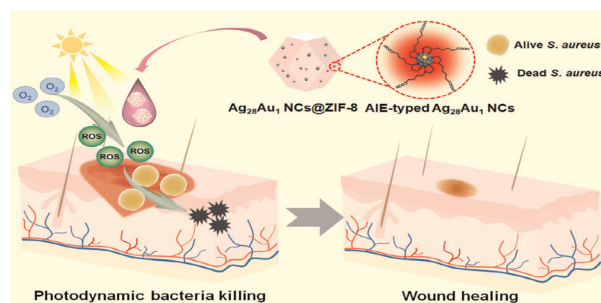


## PAPERS

14310

### Embedding AIE-type $\text{Ag}_{28}\text{Au}_1$ nanoclusters within ZIF-8 for improved photodynamic wound healing through bacterial eradication

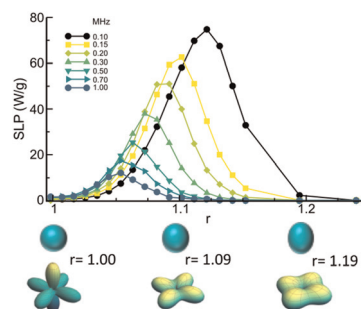
Qiuxia He, Zhen Jiang, Hongli Jiang, Songjie Han, Guoping Yang,\* Xun Yuan\* and Haiguang Zhu\*



14319

### Understanding magnetic hyperthermia performance within the "Brezovich criterion": beyond the uniaxial anisotropy description

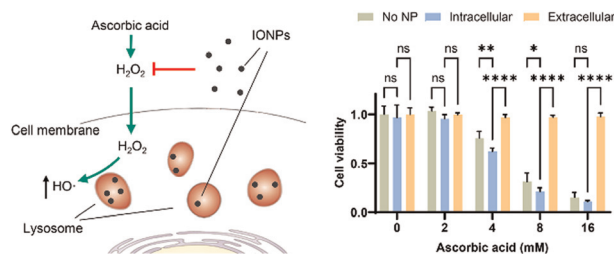
Daniel Failde, Victor Ocampo-Zalvide, David Serantes\* and Óscar Iglesias\*



14330

### Iron oxide nanozymes enhanced by ascorbic acid for macrophage-based cancer therapy

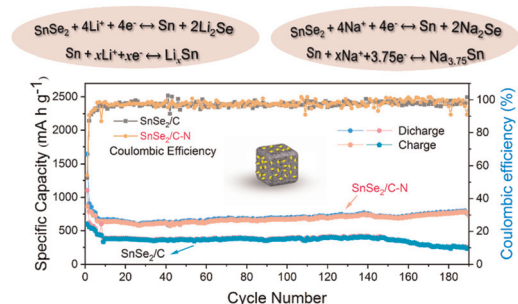
Zhongchao Yi, Xiaoyue Yang, Ying Liang and Sheng Tong\*



14339

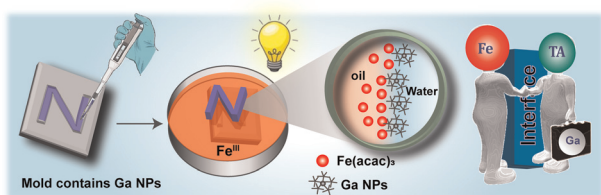
### Novel nitrogen-doped carbon-coated $\text{SnSe}_2$ based on a post-synthetically modified MOF as a high-performance anode material for LIBs and SIBs

Zhiyuan Chen, Zhe Zhang, Longzhen Wang, Yifei Li, Yiting Wang, Yichuan Rui, Ailing Song,\* Min Li, Yinyu Xiang, Kaibin Chu, Lei Jiang,\* Bohejin Tang,\* Ning Han, Guoxiu Wang and Hao Tian\*



## PAPERS

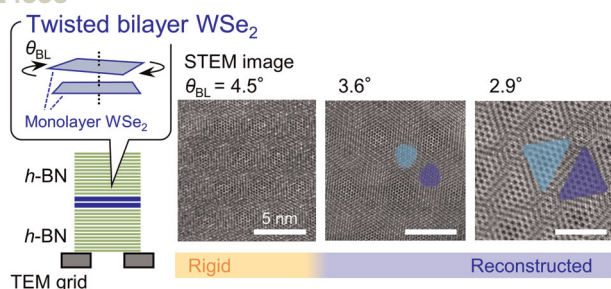
14350



### Sculpting liquid metal stabilized interfaces: a gateway to liquid electronics

Reek Mahapatra, Subhabrata Das, Arshdeep Kaur Gill, Devender Singh, Anvi Sangwan, Kaushik Ghosh and Debabrata Patra\*

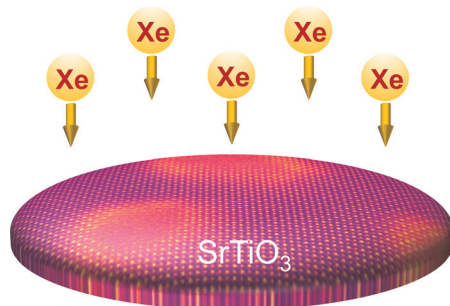
14358



### Crossover between rigid and reconstructed moiré lattice in *h*-BN-encapsulated twisted bilayer WSe<sub>2</sub> with different twist angles

Kei Kinoshita,\* Yung-Chang Lin, Rai Moriya,\* Shota Okazaki, Momoko Onodera, Yijin Zhang, Ryosuke Senga, Kenji Watanabe, Takashi Taniguchi, Takao Sasagawa, Kazu Suenaga and Tomoki Machida\*

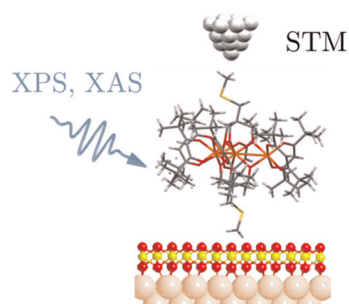
14366



### Nanoscale core-shell structure and recrystallization of swift heavy ion tracks in SrTiO<sub>3</sub>

Ashish Kumar Gupta, Eva Zarkadoula, Maxim Ziatdinov, Sergei V. Kalinin, Vikas Reddy Paduri, Jordan A. Hachtel, Yanwen Zhang, Christina Trautmann, William J. Weber\* and Ritesh Sachan\*

14378



### Assembling Fe<sub>4</sub> single-molecule magnets on a TiO<sub>2</sub> monolayer

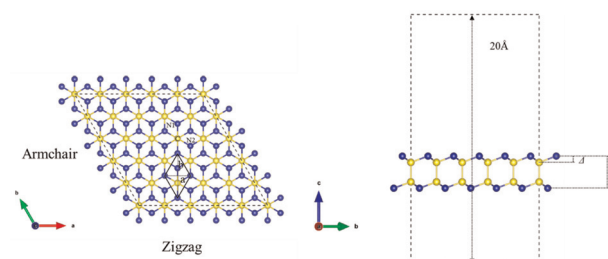
Andrea Luigi Sorrentino, Lorenzo Poggini,\* Giulia Serrano, Giuseppe Cucinotta, Brunetto Cortigiani, Luigi Malavolti, Francesca Parenti, Edwige Otero, Marie-Anne Arrio, Philippe Saintavit, Andrea Caneschi, Andrea Cornia, Roberta Sessoli and Matteo Mannini\*



14387

## Giant thermal conductivity and strain thermal response of nitrogen substituted diamane: a machine-learning-based prediction

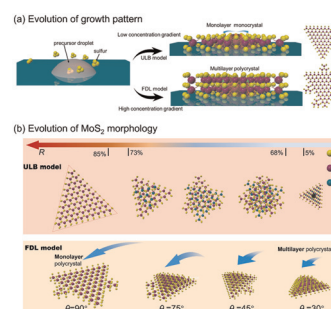
Biao Wang, Zhenqiao Huang, Xingchun Xu,\* Saifei Fan, Kunlong Zhao and Jiaqi Zhu\*



14402

## The effect of sulfuration reaction rates with sulphur concentration gradient dependence on the growth pattern and morphological evolution of MoS<sub>2</sub> in laminar flow

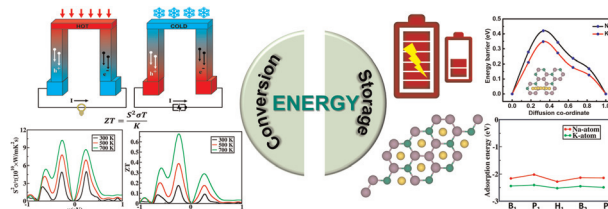
Zhen-Hua Han, Qi-Bo Wang, Qin-Qin Xu,\* Xin-Hui Qiu, Tong Cheng, Dong-Sheng Jiao and Jian-Zhong Yin



14418

## Two-dimensional Be<sub>2</sub>P<sub>4</sub> as a promising thermoelectric material and anode for Na/K-ion batteries

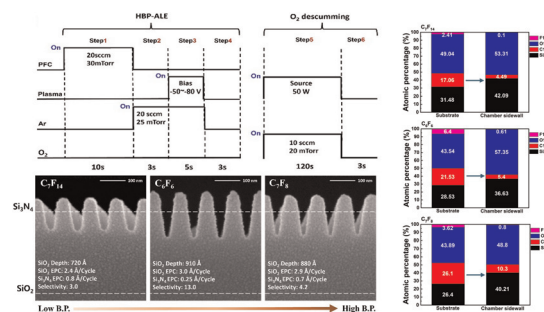
Nidhi Verma, Poonam Chauhan and Ashok Kumar\*



14433

## Clean SiO<sub>2</sub> atomic layer etching based on physisorption of high boiling point perfluorocarbon

Dain Sung, Hyunwoo Tak, Heeju Kim, Dongwoo Kim, Kyongnam Kim\* and Geunyoung Yeom\*



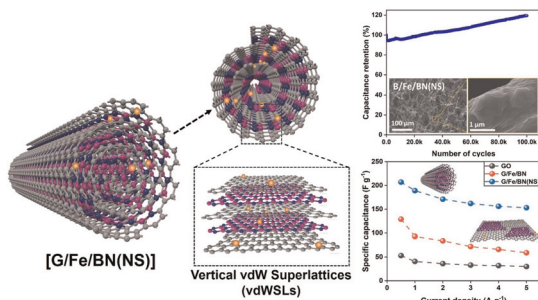
14441



### Electrocatalytic nitrogen reduction to ammonia by atomically precise Cu<sub>6</sub> nanoclusters supported on graphene oxide

Aamir Shehzad, Chaonan Cui,\* Ran Cheng and Zhixun Luo\*

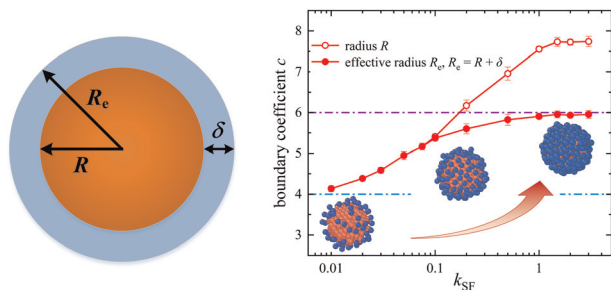
14448



### A facile and scalable fabrication method of scrolled graphene/boron nitride-based van der Waals superlattice heterostructure materials for highly stable supercapacitor electrode application

Ok-Kyung Park, Nam Hoon Kim\* and Joong Hee Lee\*

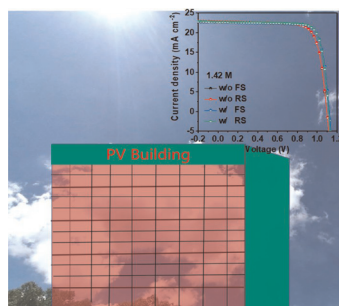
14459



### Drag on nanoparticles in a liquid: from slip to stick boundary conditions

Wangwang Liu, Jun Wang,\* Guodong Xia and Zhigang Li\*

14469



### Efficient and stable semitransparent perovskite photovoltaics via a Lewis base incorporation

Jixi Zeng, Xi Fan,\* Jinzhao Wang, Ziqi Zhang, Jiwen Chen, Kwun Nam Hui and Weijie Song\*

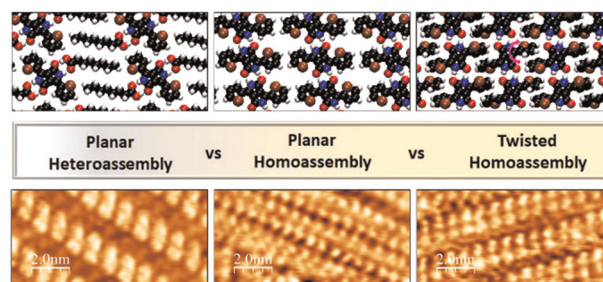


## PAPERS

14477

### Effect of aromatic substituents on the H-bonded assembly of diketopyrrolopyrroles at solid–liquid interfaces

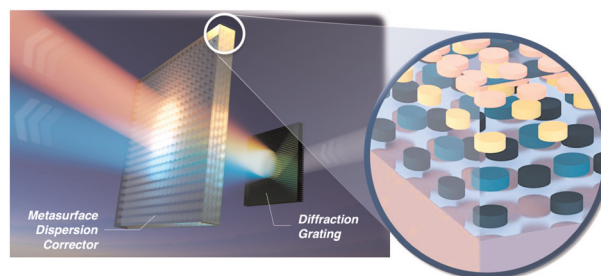
Navathej Preetha Genesh, Dominik Dettmann, Daling Cui, Yuxuan Che, Violeta Toader, Tarnjit Kaur Johal, Chaoying Fu,\* Dmytro F. Perepichka\* and Federico Rosei\*



14490

### Infrared color-sorting metasurfaces

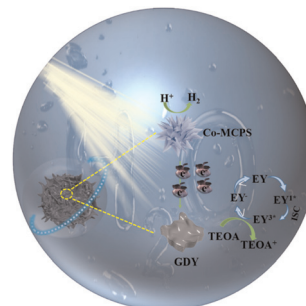
Guanghao Chen, Junxiao Zhou, Li Chen, Fanglin Tian and Zhaowei Liu\*



14498

### Design of a photocatalyst combining graphdiyne ( $g-C_nH_{2n-2}$ ) nanosheets with a PVP-modified co-metal coordination polymer and its hydrogen-evolution performance

Huijun Zhang, Yueyang Zhang, Linqing Zhang, Hai Liu,\* Minjun Lei and Zhiliang Jin\*



14510

### Properties of silicon nanoparticles prepared by pulse discharge and ball milling

Hong Yang, Hongyuan Shang and Xiaoguang Zhang\*

