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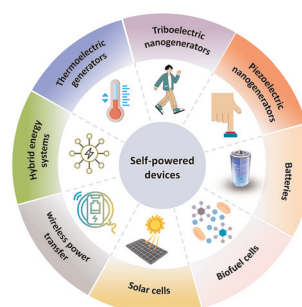
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## MINIREVIEWS

2423

## Advances in integrated power supplies for self-powered bioelectronic devices

Yu Xin, Bin Sun, Yifei Kong, Bojie Zhao, Jiayang Chen, Kui Shen and Yamin Zhang\*



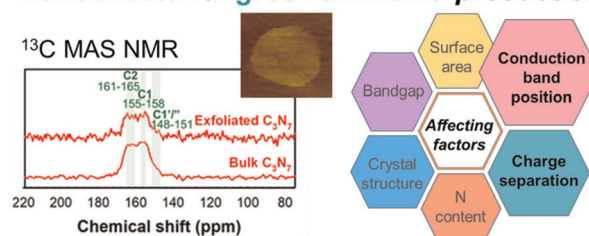
## COMMUNICATIONS

2438

Exfoliation of triazole-based  $C_3N_{4.8}$ ,  $C_3N_6$ , and  $C_3N_7$  nanosheets for efficient photocatalytic ammonia production

Ayoung Yoon, Taehoon Kim, Dokyung Kim, Young Joo Lee, Seong-Ju Hwang\* and In Young Kim\*

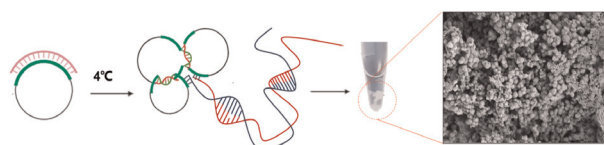
## Exfoliation of triazole-based carbon nitride nanosheets for green ammonia production



2444

## A straightforward process manipulates the dramatic morphological changes of DNA rolling circle amplification products

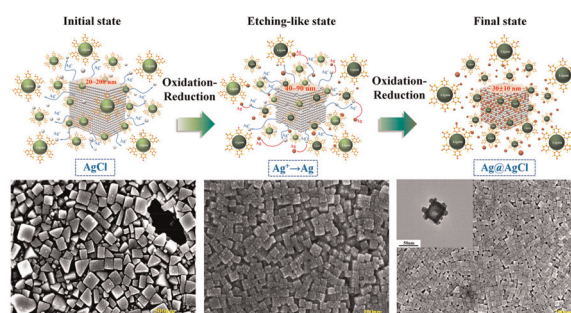
Li Xu, Han Wang, Yining Yang, Han Zhang, Shuqi Fang, Yuchen Zhao, Tianjing Zhang, Xianzheng Zhang, Jiemin Zhao\* and Lingling Zhang\*



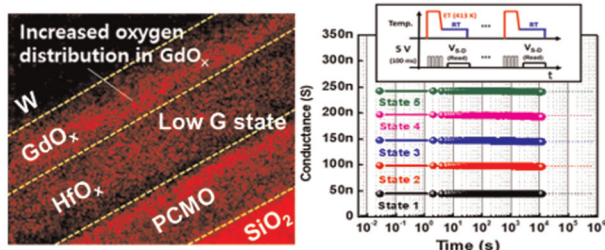
2451

## Lignosulfonate as a versatile regulator for the mediated synthesis of Ag@AgCl nanocubes

Lingyu Yin, Jian Yang, Liqin Liu,\* Bin Lu, Xiaofeng Lyu, Zhengbai Cheng, Hongbin Liu\* and Xingye An\*



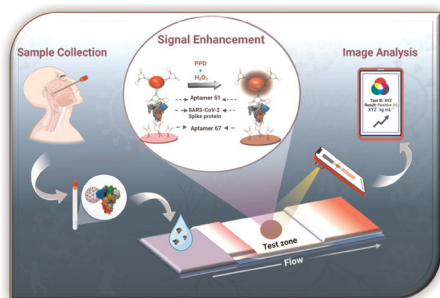
2462



### Improvement of the weight update and retention characteristics of $\text{Pr}_{0.7}\text{Ca}_{0.3}\text{MnO}_{3-x}$ ECRAM via elevated temperature training

Chuljun Lee, Dongmin Kim, Seojin Cho and Daeseok Lee\*

2469

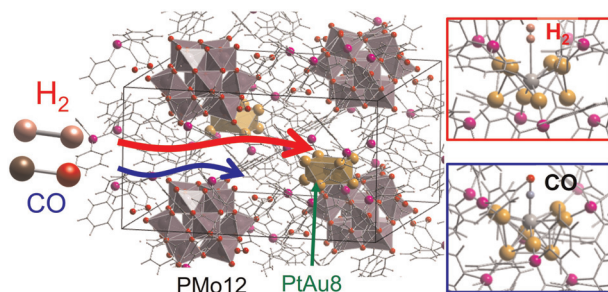


### Enhancing chemical signal transformation in lateral flow assays using aptamer-architected plasmonic nanozymes and para-phenylenediamine

Elangovan Sarathkumar, Kunnumpurathu Jibin, Subramani Sivaselvam, Arumugam Selva Sharma, Vincent Alexander, A. N. Resmi, Poornima Velswamy and Ramapurath S. Jayasree\*

## PAPERS

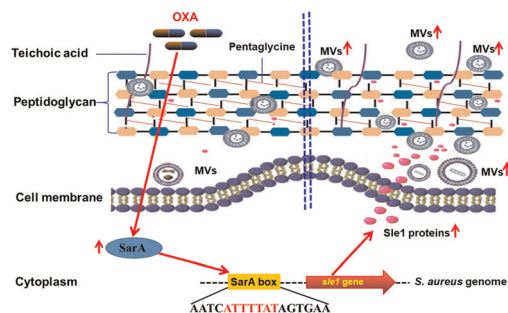
2480



### *In situ* QXAFS study of CO and H<sub>2</sub> adsorption on Pt in $[\text{PtAu}_8(\text{PPh}_3)_8]\text{-H}[\text{PMo}_{12}\text{O}_{40}]$ solid

Tomoki Matsuyama, Taishi Suzuki, Yuto Oba, Soichi Kikkawa, Sayaka Uchida, Junya Ohyama, Kotaro Higashi, Takuma Kaneko, Kazuo Kato, Kiyofumi Nitta, Tomoya Uruga, Keisuke Hatada, Kazuki Yoshikawa, Amelie Heilmaier, Kosuke Suzuki, Kentaro Yonesato, Kazuya Yamaguchi, Naoki Nakatani, Hideyuki Kawasoko and Seiji Yamazoe\*

2488



### Oxacillin promotes membrane vesicle secretion in *Staphylococcus aureus* via a SarA–Sle1 regulatory cascade

Yuting Wang, Xiaonan Huang, Zhen Hu, Huagang Peng, Yi Yang, Juan Chen, Jianxiong Dou, Chuan Xiao, Weilong Shang\* and Xiancai Rao\*

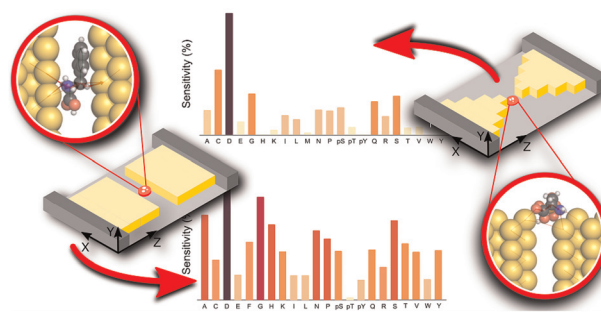


## PAPERS

2498

### Detection and distinction of amino acids and post-translational modifications with gold nanojunctions

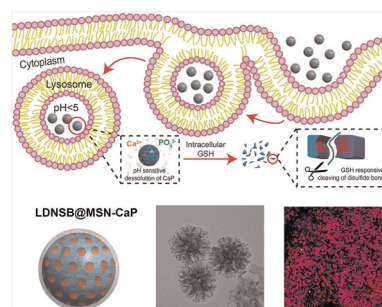
Rodrigo G. Amorim,\* Filipe C. D. A. Lima, Fábio Arthur Leão de Souza, Wanderlã L. Scopel, Jariyanee Prasongkit and Ralph H. Scheicher\*



2506

### Dual-stimuli-responsive nanoparticles for the co-delivery of small molecules to promote neural differentiation of human iPSCs

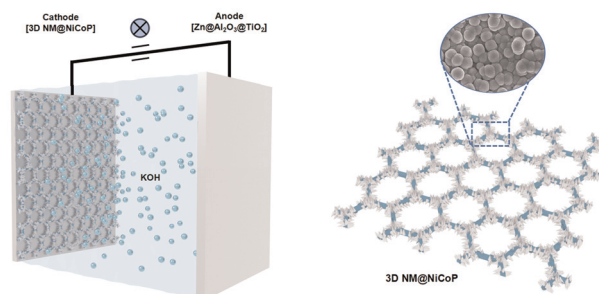
Jeong Hyun You, Na Yeon Kim, Yoon Young Choi, Hyung Woo Choi and Bong Geun Chung\*



2520

### Ultralight flexible 3D nickel micromesh decorated with NiCoP for high stability alkaline zinc batteries

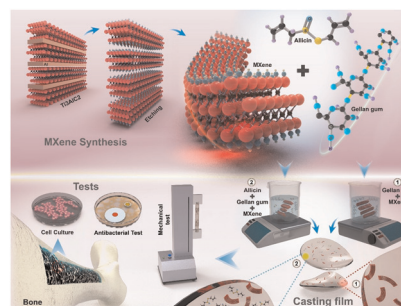
Zana Karim Abdul, Zeqi Nie, Yapeng Zhang, XiuXue Liu, Xiaohu Wang, Niwamanya Gilbert, Donghai Wei,\* Wen Zhang\* and Guanhua Zhang



2528

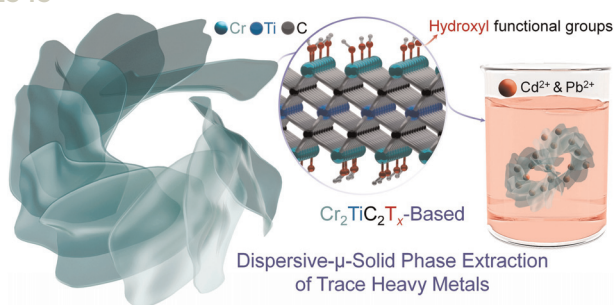
### Multipurpose triadic MXene/garlic/gellan gum-based architecture in the horizon of bone tissue regeneration

Lin Zhou, Zhuo Zhao, Seyedeh Nooshin Banitaba, Sanaz Khademolqorani, Xin Han\* and Guang Chen\*



## PAPERS

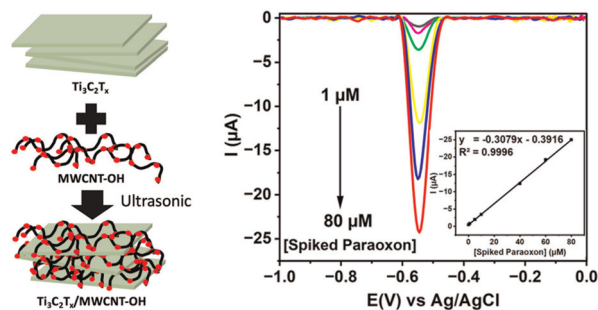
2545



### Cr<sub>2</sub>TiC<sub>2</sub>T<sub>x</sub> MXene as an adsorbent material in ultrasonic-assisted d- $\mu$ -solid phase extraction for trace detection of heavy metals

Saman Bagheri,\* Rashmeet Kaur Khurana, Md. Ibrahim Kholil, Michael J. Loes, Shengyuan Luo and Alexander Sinitskii\*

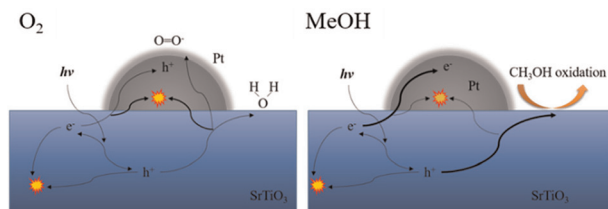
2554



### Ultrasensitive non-enzymatic electrochemical detection of paraoxon-ethyl in fruit samples using 2D Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub>/MWCNT-OH

Asmi Aris, Wulan Tri Wahyuni, Budi Riza Putra, Angga Hermawan, Ferry Anggoro Ardy Nugroho, Zhi Wei Seh\* and Munawar Khalil\*

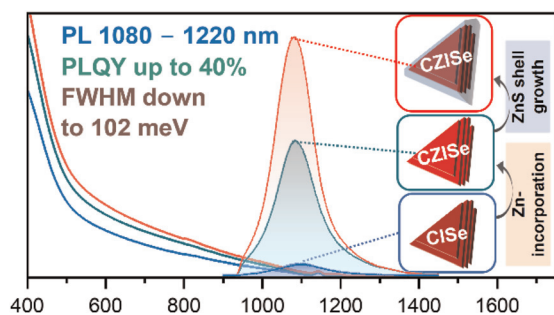
2567



### Photogenerated charge carrier dynamics on Pt-loaded SrTiO<sub>3</sub> nanoparticles studied *via* transient-absorption spectroscopy

Fumihiko Ichihara, Hong Pang,\* Tetsuya Kako, Detlef W. Bahnemann and Jinhua Ye\*

2577



### Triangular-shaped Cu–Zn–In–Se-based nanocrystals with narrow near infrared photoluminescence

Ankita Bora, Ningyuan Fu, Avijit Saha, Anatol Prudnikau, René Hübner, Houman Bahmani Jalali, Francesco Di Stasio, Nikolai Gaponik and Vladimir Lesnyak\*

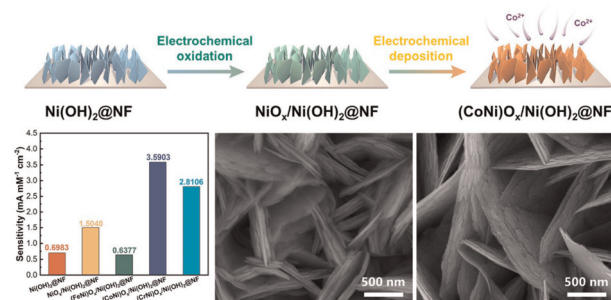


## PAPERS

2589

### Construction of bimetallic oxy-hydroxides based on Ni(OH)<sub>2</sub> nanosheets for sensitive non-enzymatic glucose detection via electrochemical oxidation and incorporation

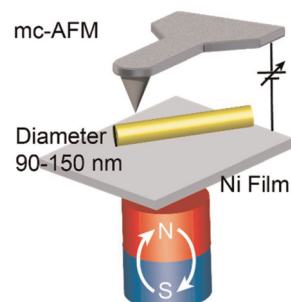
Weiji Dai,\* Bing Wu, Fan Zhang, Yuxi Huang, Cuijiao Zhao, Yudong Zhang, Can Cui, Jing Guo and Saifang Huang\*



2599

### Chiral induction at the nanoscale and spin selectivity in electron transmission in chiral methylated BEDT-TTF derivatives

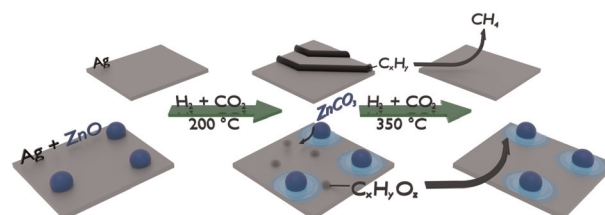
Alberta Carella, Suryakant Mishra, Camilla Ferrari, Davide Vanossi, Francesco Rossella, Flavia Pop, Narcis Avarvari,\* Han Htoon, Jennifer A. Hollingsworth, Eric G. Bowes, Somak Majumder, Andrew Crandall Jones\* and Claudio Fontanesi\*



2608

### Influence of zinc oxide nanoparticles on the carbon accumulation on silver exposed to carbon dioxide hydrogenation reaction conditions

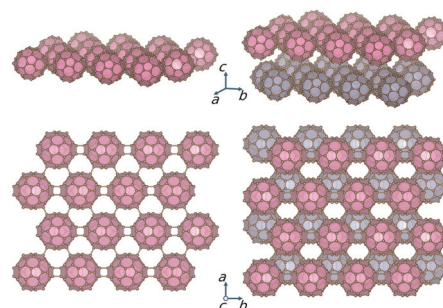
Paul Maurice Leidinger,\* Mirco Panighel, Vitaly L. Sushkevich, Paolo Piseri, Alessandro Podestà, Jeroen A. van Bokhoven and Luca Artiglia\*



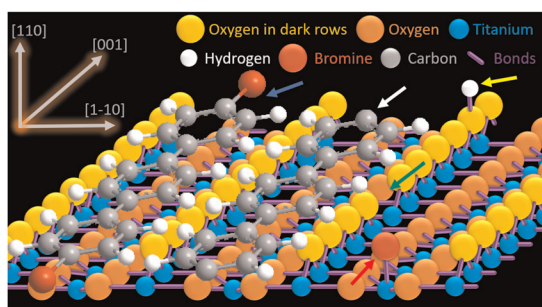
2616

### Tuning electronic and optical properties of 2D polymeric C<sub>60</sub> by stacking two layers

Dylan Shearsby, Jiaqi Wu, Dekun Yang and Bo Peng\*



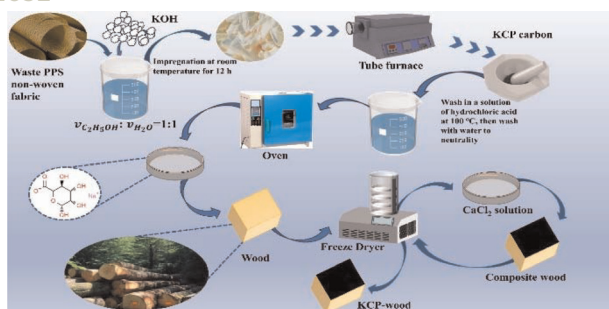
2621



### Catalytic effects of iron adatoms in poly(*para*-phenylene) synthesis on rutile TiO<sub>2</sub>(110)

Mohammadreza Rostami, Biao Yang,\* Xiaochuan Ma, Sifan You, Jin Zhou, Meng Zhang, Xuefeng Cui, Haiming Zhang, Francesco Allegretti, Bing Wang, Lifeng Chi\* and Johannes V. Barth\*

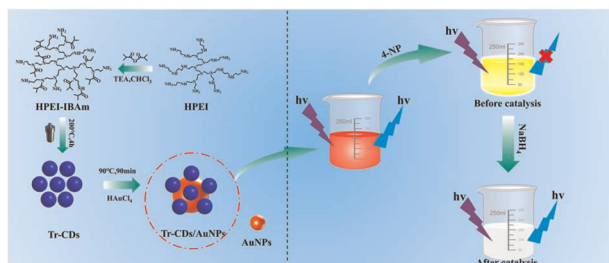
2631



### Preparation of sulfur-doped porous carbon from polyphenylene sulfide waste for photothermal conversion materials to achieve solar-driven water evaporation

Xuejing Wei, Zixuan Zou, Jiayi Yao, Li Sun, Yinxing Xu, Lufeng Zhang, Shaohua Chen,\* Yuhao Liu\* and Jiayue Chen\*

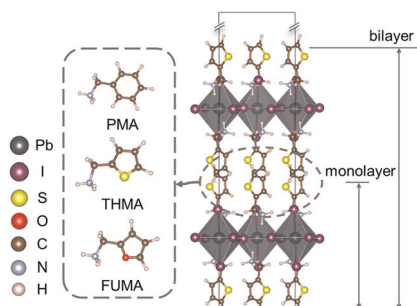
2644



### A temperature-sensitive and fluorescent Tr-CD/AuNP-based catalyst for efficient, monitorable, and recyclable catalytic reactions

Wenjie Zhong, Jifan Zhang, Chenxue Zhu, Huaguo Tang, Xunyong Liu,\* Zhuhui Qiao\* and Yi Liu\*

2658



### Theoretical insights into spacer molecule design to tune stability, dielectric, and exciton properties in 2D perovskites

Xing Liu, Hejin Yan, Zheng Shu, Xiangyue Cui and Yongqing Cai\*

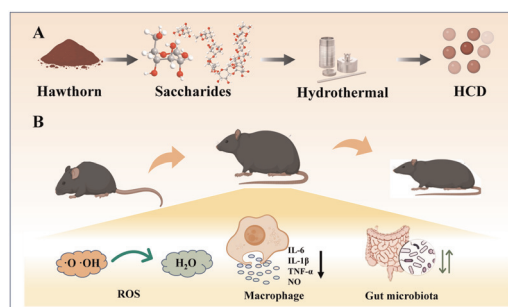


## PAPERS

2668

### Hawthorn carbon dots: a novel therapeutic agent for modulating body weight and hepatic lipid profiles in high-fat diet-fed mice

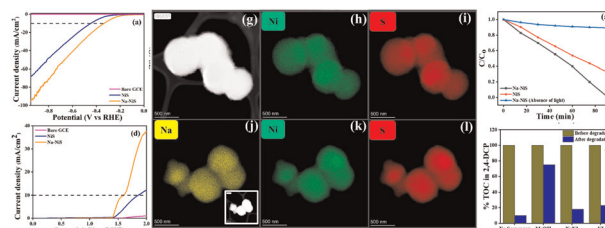
Shuai Lin, Yu-jun Zheng, Yi-ze Xu, Yang Zhou, Xin He,\* Chun-feng Zhang\* and Chun-su Yuan



2682

### Enhancing NiS performance: Na-doping for advanced photocatalytic and electrocatalytic applications

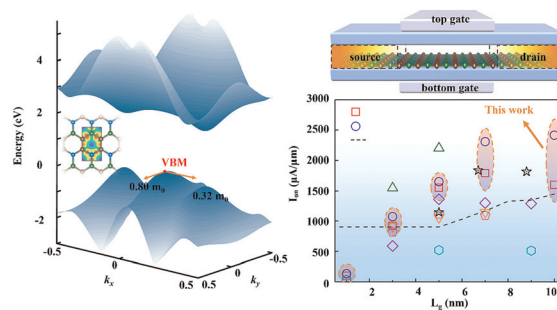
V. G. Dileepkumar, Swapna Pahra, Nieves López-Salas,\* B. M. Basavaraja,\* Afaq Ahmad Khan, N. Sumanth, Pooja Devi\* and M. S. Santosh\*



2692

### First-principles study of anisotropic planar 2D BC<sub>2</sub>N for sub-5 nm high-performance p-type transistors

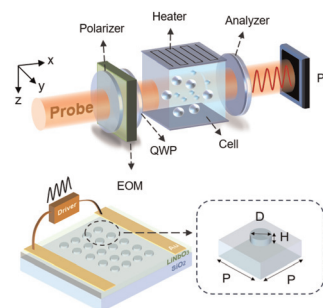
Hao Shi, Siyu Yang, Jialin Yang, Chuyao Chen, Yang Hu, Gaoyu Liu, Xiaojia Yuan,\* Hengze Qu\* and Shengli Zhang\*



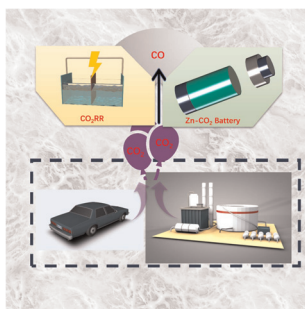
2700

### Atomic spin precession electro-optic modulation detection based on guided mode resonant lithium niobate metasurfaces

Jie Sun, Zhen Chai,\* Yuqing Yang, Zhibo Cui, Yuting Xu, Yan Xu, Yulan Fu and Heng Yuan\*



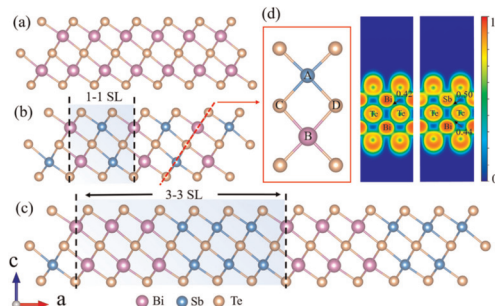
2709



### Improved performances toward electrochemical carbon dioxide and oxygen reductions by iron-doped stannum nanoparticles

Jiangtao Zhu, Quan Zhang, Caiyun Wang,\*  
Yanhong Feng, Yuanyuan Zhang, Gaocan Qi,\*  
Lian Kang, Jun Luo and Xijun Liu\*

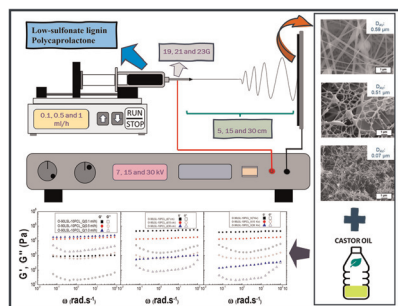
2718



### Phonon thermal transport in $\text{Bi}_2\text{Te}_3/\text{Sb}_2\text{Te}_3$ monolayer superlattices: a neural network potential study

Pan Zhang, Fang Lyu, Dan Jin, Zhenhua Zhang,  
Shiwei Chen, Yong Liu, Ziyu Wang, Zhihong Lu,  
Shiheng Liang\* and Rui Xiong\*

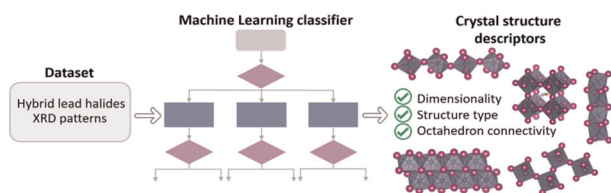
2728



### Exploration of low-sulfonate lignin electrospinning conditions for the development of new renewable lubricant formulations

José F. Rubio-Valle,\* Concepción Valencia,  
Gethzemani M. Estrada-Villegas, José E. Martín-Alfonso  
and José M. Franco

2742



### Machine learning recognition of hybrid lead halide perovskites and perovskite-related structures from X-ray diffraction patterns

E. I. Marchenko, V. V. Korolev, E. A. Kobelev,  
N. A. Belich, N. N. Udalova, N. N. Eremin, E. A. Goodilin  
and A. B. Tarasov\*

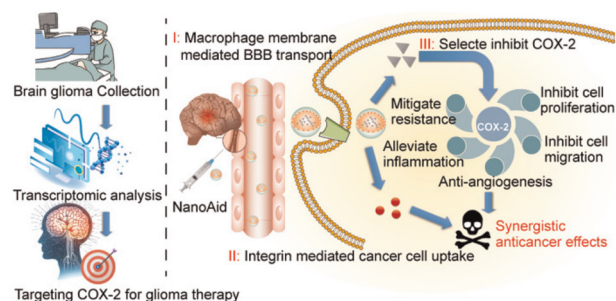


## PAPERS

2753

### Bioengineered NanoAid synergistically targets inflammatory pro-tumor processes to advance glioblastoma chemotherapy

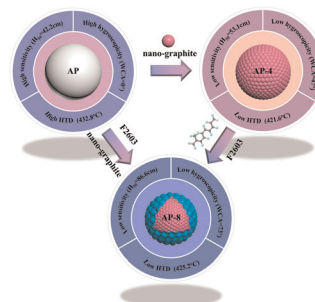
Gui Zhang, Yurui Xu, Anwei Zhou, Yongle Yu, Xinghai Ning\* and Hongguang Bao\*



2769

### Efficient construction of core/double-shelled structured AP@nano-graphite@F<sub>2603</sub> energetic microcapsules with low sensitivity and hygroscopicity

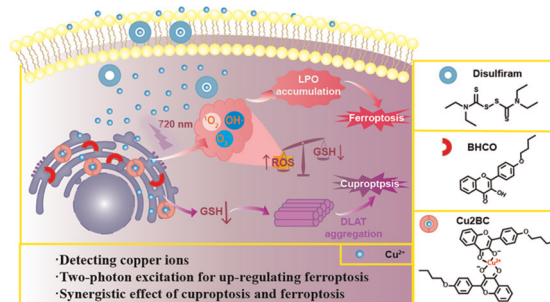
Jiahao Yu, Yong Kou, Lei Xiao, Qiangqiang Lu, Xuran Xu, Junqing Yang, Wei Jiang and Gazi Hao\*



2782

### A high-contrast NIR excitation probe for monitoring Cu<sup>2+</sup> in the endoplasmic reticulum for synergistic cuproptosis and ferroptosis anticancer therapy

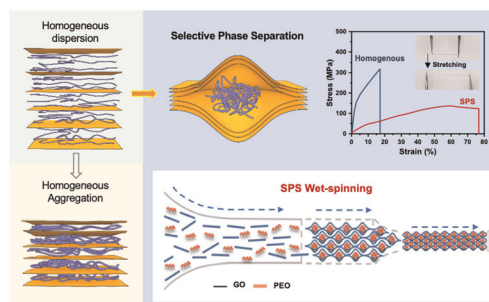
Jingjing Jiang, Qiong Zhang,\* Yue Zhang, Lintong Gao, Yan Feng,\* Xianshun Sun, Junjun Wang, Xiaojiao Zhu, Xingxing Chen and Hongping Zhou\*



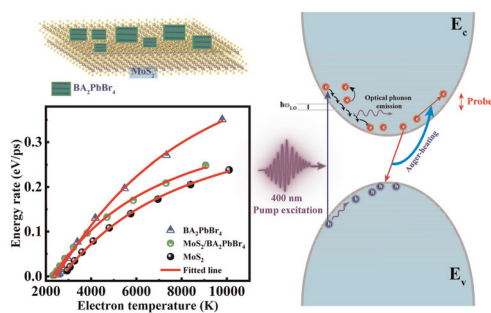
2793

### Self-limiting selective phase separation of graphene oxide and polymer composite solution

Feifan Chen, Lidan Wang, Kaiwen Li, Rui Guo, Yicong Qin, Chenwei Shen, Yingjun Liu, Zhen Xu\* and Chao Gao\*



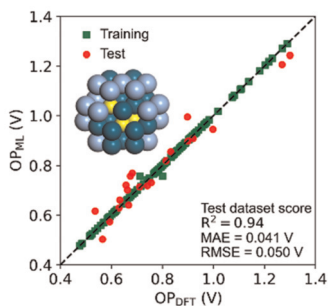
2800



### Hot carrier dynamics in the $\text{BA}_2\text{PbBr}_4/\text{MoS}_2$ heterostructure

Sumaiya Parveen, Pratap Kumar Pal, Suchetana Mukhopadhyay, Sudipta Majumder, Swapneswar Bisoi, Atikur Rahman and Anjan Barman\*

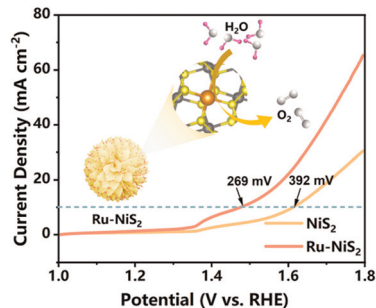
2810



### Machine learning models for easily obtainable descriptors of the electrocatalytic properties of Ag–Pd–Ir nanoalloys toward the formate oxidation reaction

Xiaoqing Liu, Fuyi Chen,\* Wanxuan Zhang, Fanzhe Ma and Peng Xu

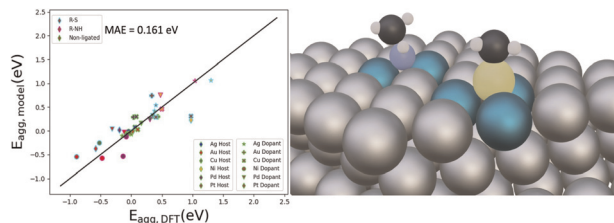
2820



### Tuning the local S coordination environment on Ru single atoms to boost the oxygen evolution reaction

Yiling Ran, Rong Gan, Qin Zhao, Quanlei Ma, Yijing Liao, Yinwei Li, Yi Wang,\* Yanwei Wang\* and Yan Zhang\*

2830



### Single atom alloys aggregation in the presence of ligands

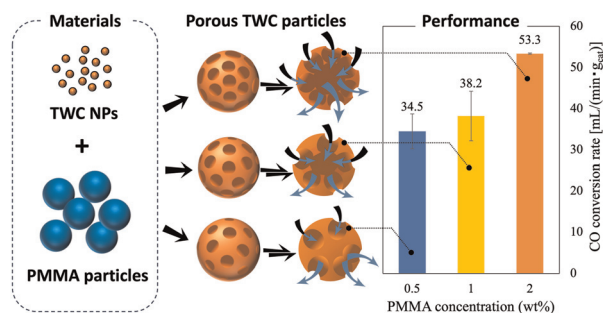
Maya Salem and Giannis Mpourmpakis\*



2841

### Enhancing CO oxidation performance by controlling the interconnected pore structure in porous three-way catalyst particles

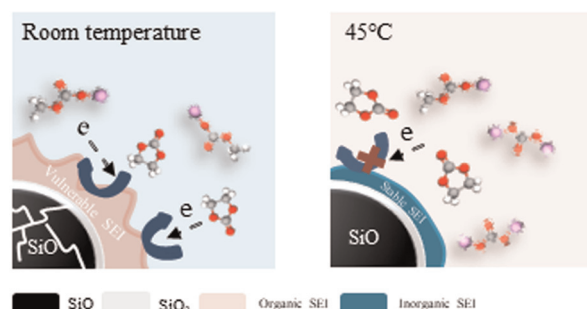
Duhaul Biqal Kautsar, Phong Hoai Le, Ai Ando, Eishi Tanabe, Kiet Le Anh Cao, Eka Lutfi Septiani, Tomoyuki Hirano and Takashi Ogi\*



2852

### Thermoelectrochemical formation of a solid electrolyte interphase on a silicon negative electrode to enhance the durability of silicon-enriched lithium-ion batteries by compositional modification

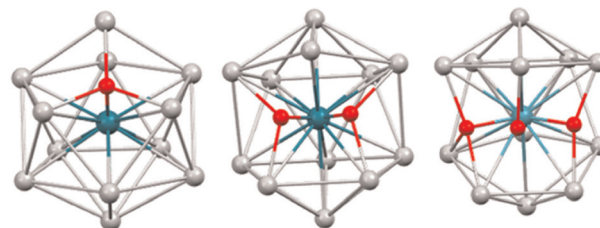
Chae Rim Lee, Miseung Kim, Chihyun Hwang, Jun Ho Song, Ji-Sang Yu and Hyun-seung Kim\*



2860

### Hydride-containing Ag- and Au-rich 8-electron superatomic icosahedral cores: a DFT investigation

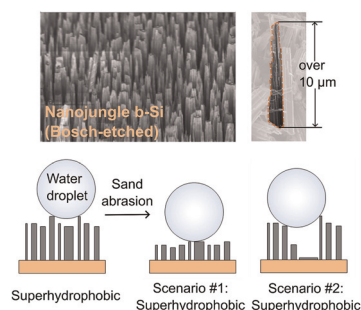
Hao Liang, Tzu-Hao Chiu, Samia Kahlal, Jian-Hong Liao, C. W. Liu\* and Jean-Yves Saillard\*



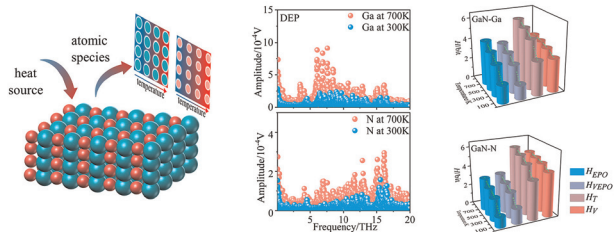
2871

### Enhanced superhydrophobic robustness of black silicon employing nanojungle structures

Lingju Meng,\* Mohammad Awashra, Seyed Mehran Mirmohammadi, Seyede Maryam Mousavi, Jaana Vapaavuori, Ville P. Jokinen and Sami Franssila\*



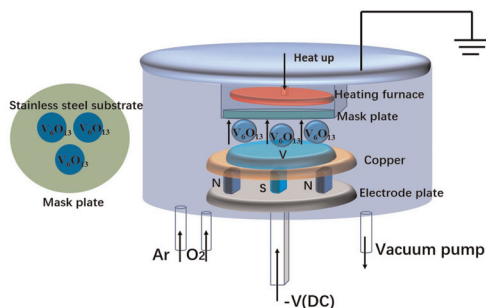
2878



### The effect of atomic vibration on thermal transport in diatomic semiconductors investigated via *ab initio* molecular dynamics

Dian Huang, Guihua Tang,\* Zhibin Gao and Shengying Yue\*

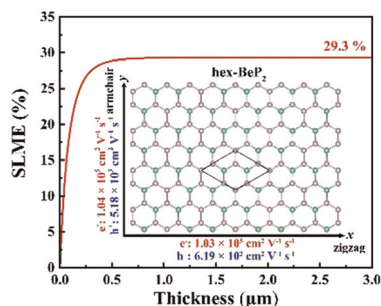
2889



### Preparation of sandwich-structured $V_6O_{13}$ via direct current magnetron sputtering for high-capacity zinc-ion batteries

Yun Zhao, Kai Feng, Qi Xv, Yanfang Qin, Siyue Song, Zhiwei Liu\* and Xuejin Wang\*

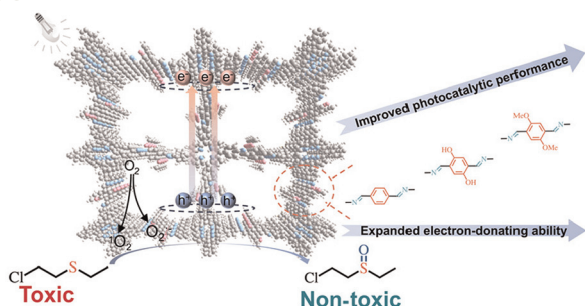
2897



### The $BeP_2$ monolayer exhibits ultra-high and highly anisotropic carrier mobility and 29.3% photovoltaic efficiency

Changping Sun, Yiming Zhang, Meiling Xu,\* Feilong Wang, Wenwen Cui, Caoping Niu and Yinwei Li\*

2904



### Photocatalytic detoxification of a sulfur mustard simulant using donor-enhanced porphyrin-based covalent-organic frameworks

Yana Chen, Zewen Shen, Yezi Hu, Haotian Zhang, Lisha Yin, Guixia Zhao,\* Guangtong Hai\* and Xiubing Huang\*



## CORRECTION

2912

**Correction: Camptothecin-based prodrug nanomedicines for cancer therapy**

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