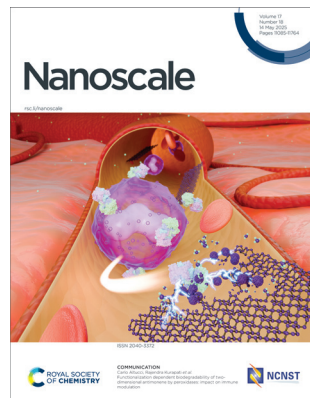


## IN THIS ISSUE

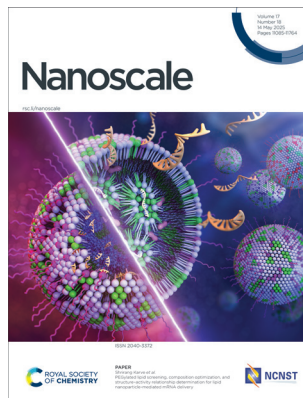
ISSN 2040-3372 CODEN NANOHL 17(18) 11085–11764 (2025)



### Cover

See Carlo Altucci, Rajendra Kurapati *et al* pp. 11293–11304.

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### Inside cover

See Shirrang Karve *et al.*, pp. 11329–11344.

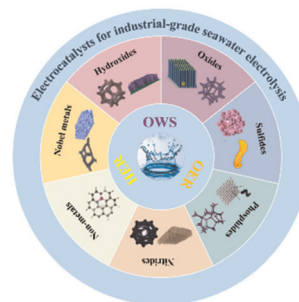
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## REVIEWS

11101

### Strategies for industrial-grade seawater electrolysis: from electrocatalysts and device design to techno-economic analysis

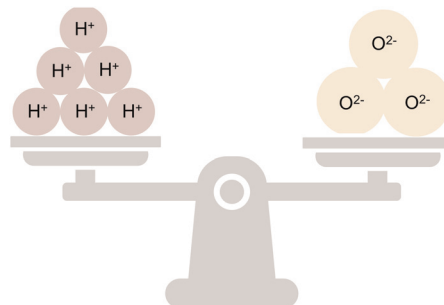
Yuqing Wang,\* Feng Li, Luoyin Zhao, Yuchen Wang, Guang Yang, Jinyan Tian, Shuaibing Heng, Xuewen Sun, Jianxu Zhao, Minghua Chen\* and Qingguo Chen\*



11133

### Progress in understanding triple ionic–electronic conduction in perovskite oxides for protonic ceramic fuel cell applications

Desheng Feng,\* Zhonghua Zhu, Dan Li and Mengran Li\*



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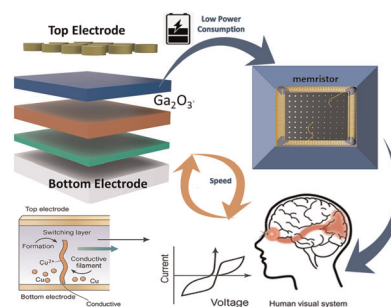
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## REVIEWS

11152

### Advances in Ga<sub>2</sub>O<sub>3</sub>-based memristor devices, modeling, properties, and applications for low power neuromorphic computing

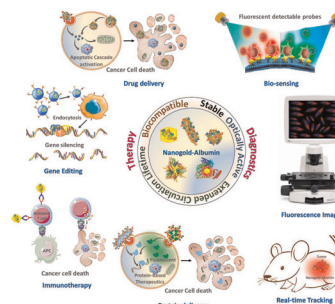
Rajwali Khan,\* Naveed Ur Rehman, R. Thangappan, Appukuttan Saritha and Sambasivam Sangaraju\*



11191

### Nanogold-albumin conjugates: transformative approaches for next-generation cancer therapy and diagnostics

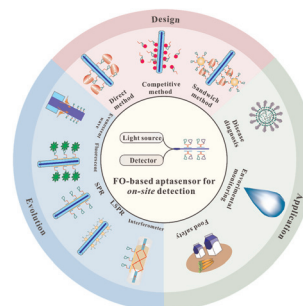
Namita Jaiswal, Nibedita Mahata and Nripen Chanda\*



11221

### Advances in portable fiber optic-based aptasensors for on-site detection: design, evolution, and application

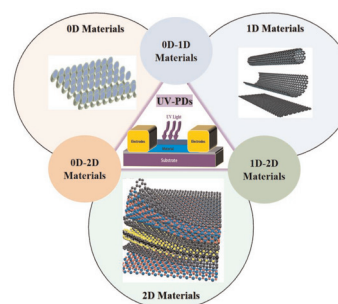
Yue Wang, Yuanfeng Wu, Bowen Lu, Mingyue Li, Peijun Ji, Shijian Feng, Yu Li, Huichun Lin,\* Yuling Xiao,\* Zewei Luo\* and Yixiang Duan



11246

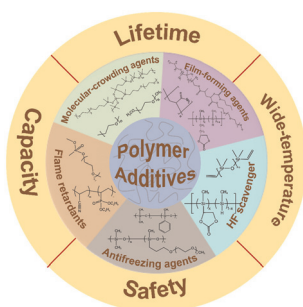
### Recent progress in ultraviolet photodetectors based on low-dimensional materials

Vijay Laxmi, Yudi Tu, Deepika Tyagi, Pramoda K. Nayak, Yibin Tian\* and Wenjing Zhang\*



## MINIREVIEW

11275

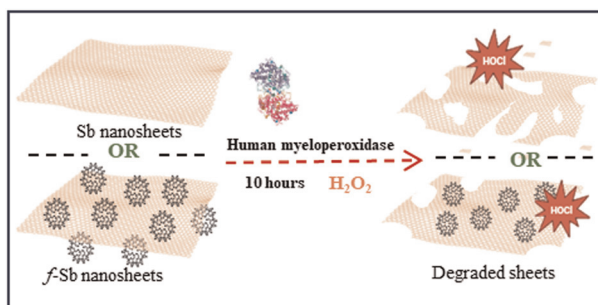


### Polymer additives in liquid electrolytes for advanced lithium batteries

Kefeng Wang, Man Zhang, Jingxiao Ren, Wei Wei\* and Jianwei Nai\*

## COMMUNICATIONS

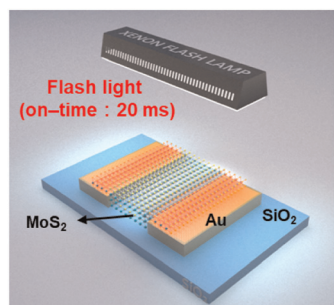
11293



### Functionalization dependent biodegradability of two-dimensional antimonene by peroxidases: impact on immune modulation

Jasneet Kaur, K. Swetha, Manjot Singh, Avazbek Abduvakhidov, Michela Varra, Manikrishna Lakavathu, Jaber Adam, Anjali Prajapati, Srinivasa Reddy Bonam, Carlo Altucci\* and Rajendra Kurapati\*

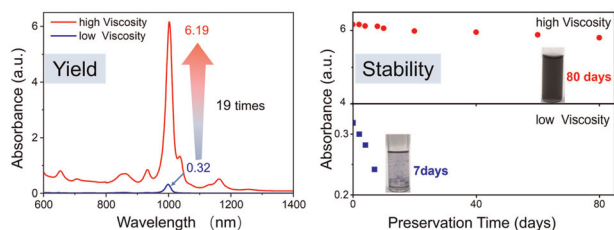
11305



### Selective and local flash-annealing for improvement in the contact characteristics of MoS<sub>2</sub> transistors

Jun-Hwe Cha, Inseong Lee, Seol Won Yun, Woonggi Hong, Hyo Hoon Byeon, Jungyeop Oh, Seohak Park and Sung-Yool Choi\*

11316



### Key factor in enhancing yield and stability in single-chirality carbon nanotubes extraction: solvent viscosity

Feng Jin, Qingyuan Li, Yuqi He, Deng Pan, Yujie Peng, Yahui Li, Song Qiu,\* Chuanling Men\* and Zheng Chen\*

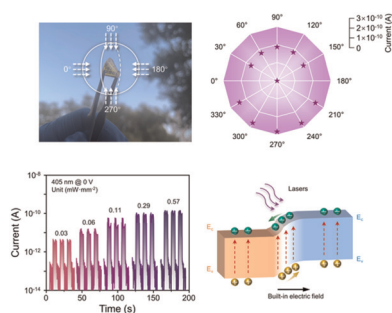


## COMMUNICATIONS

11322

### Toward flexible and omnidirectional self-powered near-ultraviolet photodetection by constructing a mixed-dimensional nanobelt/nanosheet heterojunction of CdS/PbI<sub>2</sub>

Junchen Wan, Siyin Gao, Yujie Xu, Zixu Sa, Guangcan Wang, Xiaoyan Du, Mingsheng Xu,\* Yanxue Yin and Zai-xing Yang\*

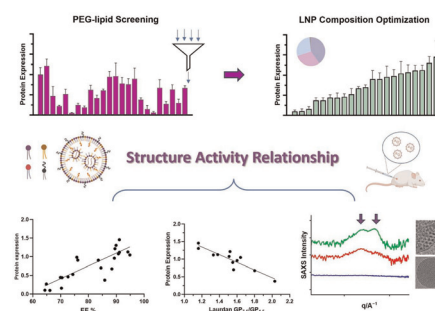


## PAPERS

11329

### PEGylated lipid screening, composition optimization, and structure–activity relationship determination for lipid nanoparticle-mediated mRNA delivery

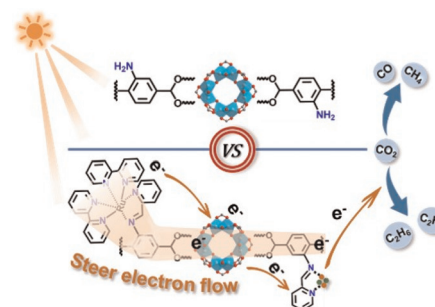
Lingyun Liu, Jae-Heon Kim, Zhongyu Li, Mengwei Sun, Trent Northen, Jackie Tang, Emma Mcintosh, Shirang Karve\* and Frank DeRosa



11345

### Steering electron flow by constructing an integrated structure in a metal–organic framework (MOF) *via* iminopyridine units for efficient CO<sub>2</sub> photoreduction to C<sub>2</sub>H<sub>4</sub> and C<sub>2</sub>H<sub>6</sub>

Lin Ye, Linghui Su, Wanglai Cen and Dengrong Sun\*

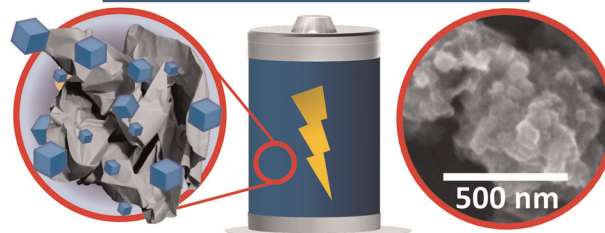


11353

### Thin films based on nanocomposites of crumpled graphene fully decorated with Prussian blue: a new material for aqueous battery systems

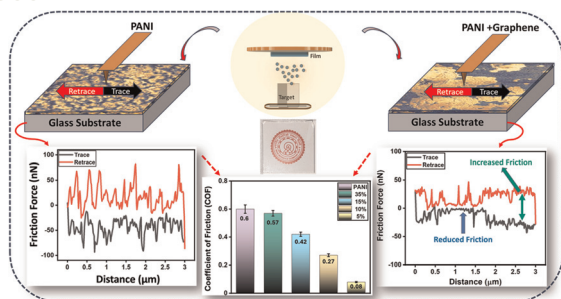
Vitor H. N. Martins, Monize M. Silva, Maria K. Ramos, Maria H. Verdán, Eduardo G. C. Neiva, Aldo J. G. Zarbin and Victor H. R. Souza\*

### Crumpled Graphene Decorated with Prussian blue in Aqueous Battery System



## PAPERS

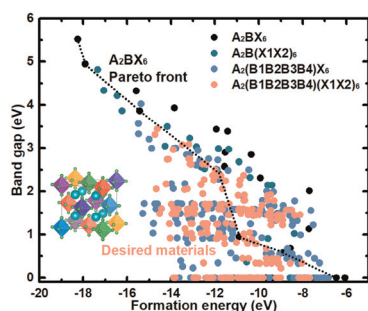
11366



### Tuning the nanoscale tribological characteristics of thermally evaporated transparent polyaniline-graphene nanocomposite thin films

Soumyasuravi Thakur, Debottam Datta, Jitendra P. Singh, Nitya N. Gosvami\* and Nirat Ray\*

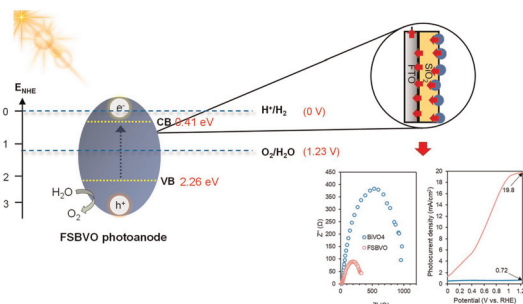
11376



### Pushing the boundary of the stability and band gap Pareto front by going towards high-entropy perovskites

Zhendian Zhang, Victor Fung\* and Guoxiang Hu\*

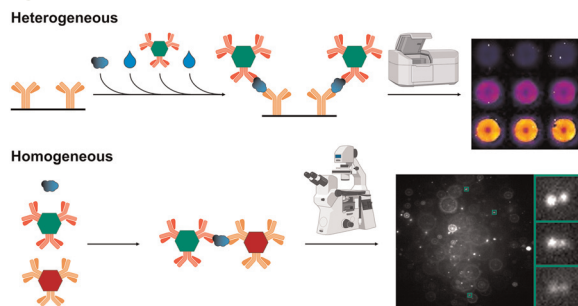
11385



### Nano-bismuth vanadate supported on fibrous silica reduces the intrinsic charge impedance for superior photoelectrochemical water-splitting performance

N. M. Izzudin, A. A. Jalil,\* Saravanan Rajendran, N. S. Hassan, M. H. Sawal, N. I. H. Hazril, Y. Nagao, K. Aoki and S. H. Zein

11401



### Bioconjugates of photon-upconversion nanoparticles with antibodies for the detection of prostate-specific antigen and p53 in heterogeneous and homogeneous immunoassays

Ekaterina Makhneva, Pavel Špaček, Antonín Hlaváček,\* Julie Weisová, Hans H. Gorris, Petr Skládal and Zdeněk Farka\*

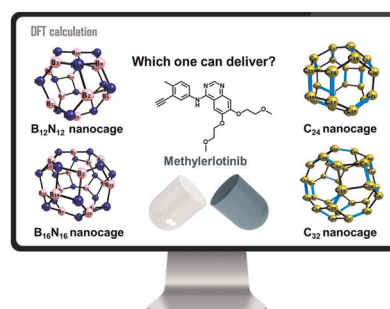


## PAPERS

11413

### Comparative study of the therapeutic potential of C<sub>24</sub>, C<sub>32</sub>, B<sub>12</sub>N<sub>12</sub>, and B<sub>16</sub>N<sub>16</sub> nanocages as drug delivery carriers for delivering an erlotinib derivative: DFT and QTAIM investigations

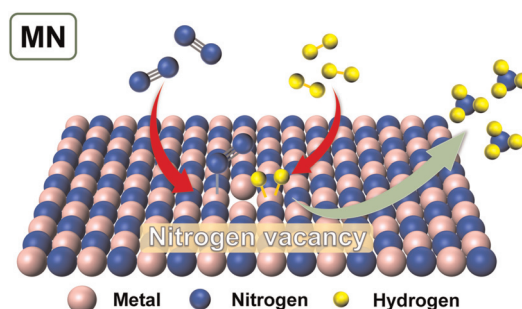
Khourshid Mehdizadeh, Sourour PourFalatoon, Milad Nouraliei, Majid Farsadrooh,\* Hanseung Kim, Marzieh Ramezani Farani\* and Yun Suk Huh\*



11426

### Insight into the role of tunable nitrogen vacancies in transition metal nitrides for ammonia synthesis

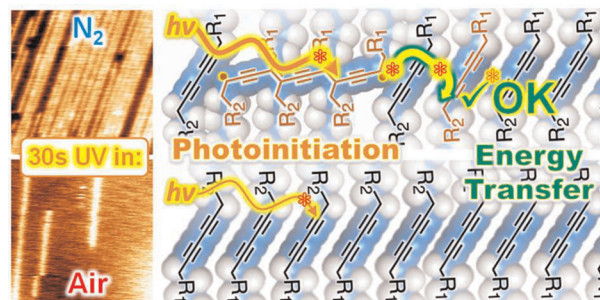
Shiqi Yu, Ziyu Mei, Luyuan Wang, Yuping Ren, Wei Wu, Mao Liu,\* Tianyi Wang\* and Chuangwei Liu\*



11434

### Improving diacetylene photopolymerization in monolayers and ultrathin films

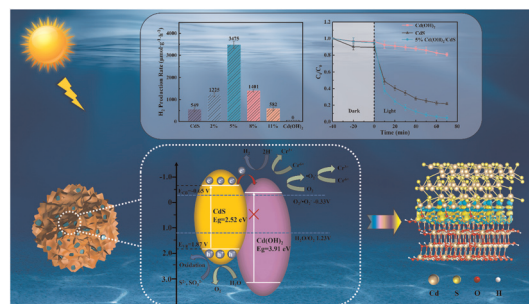
Jie Ji, Yao Li, Sven Bernaerts, Kunal S. Mali, Rui Ding, Hongzhen Lin, Louis A. Cuccia, Steven De Feyter,\* Oleksandr Ivasenko,\* Lifeng Chi\* and Yuan Fang\*



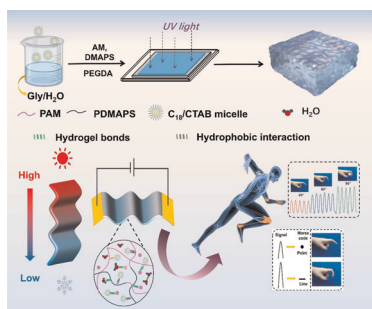
11441

### Enhanced photocatalytic H<sub>2</sub> generation and Cr(vi) reduction by a sheet-on-sheet Cd(OH)<sub>2</sub>/CdS nanocomposite

Wei Zhao, Yuxiang Yang, Yanbin Li, Yimin Liu, Yuezhou Wei, Xinpeng Wang and Deqian Zeng\*



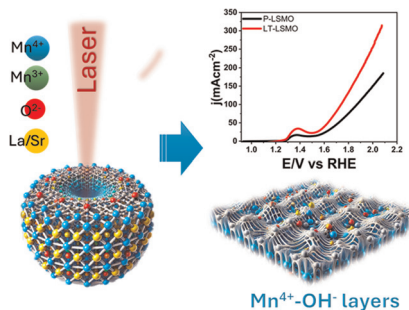
11450



### Super-stretchable, freezing-resistant and self-powered organohydrogels for extreme environment-adaptable high-performance strain sensors

Xiaoyan He,\* Penggai Ma, Shuo Ma, Runze Cao, Jing Li, Yuanyuan Lu, Yanling Liang, Xin Tian, Zhiqiang Wang and Xiaoquan Lu\*

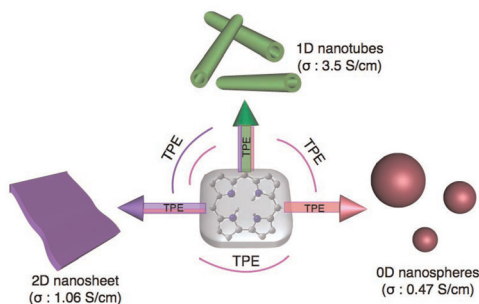
11461



### Electronic and surface engineering of Mn active sites by femtosecond lasers: enhancing catalytic performance for seawater electrolysis through Mn<sup>4+</sup>-OH<sup>-</sup> layers

Mourad Smari, Tanveer ul Haq,\* Ganjaboy Boltaev, Mohammad Y. Al-Haik, Ali S. Alnaser and Yousef Haik\*

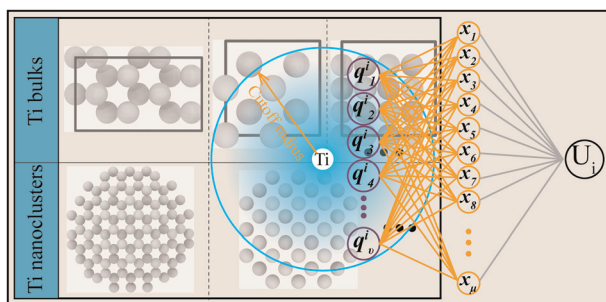
11475



### Tuning the dimensionality of semiconducting nanostructures by self-assembled tetraphenylethylene substituted corroles

Swathi Nenavath, Nagadatta Pravallika, Renikindi Sravani, Seelam Prasanthkumar\* and Lingamallu Giribabu\*

11482



### A physics-informed machine learning perspective to present the structures and properties of titanium matrixes and nanoclusters through atomic modeling

Jie Liu and Lin Zhang\*

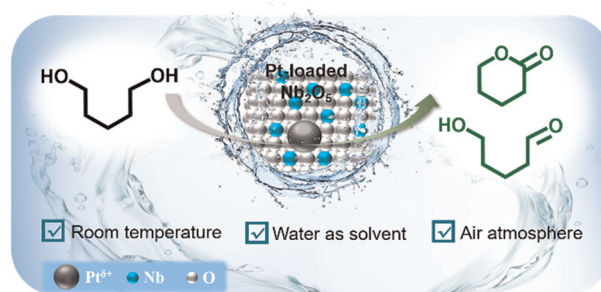


## PAPERS

11502

### A Pt/Nb<sub>2</sub>O<sub>5</sub> catalyst for oxidative conversion of 1,5-pentandiol into 5-hydroxypentanal and $\delta$ -valerolactone under ambient conditions

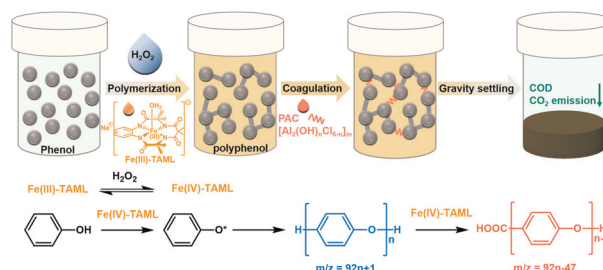
Ling Yao, Guilong Lu, Yannik Haver, Yezi Hu, Zewen Shen, Xinyu Kong, Zhaoxin Li, Baoxiang Peng, Guixia Zhao,\* Martin Muhler\* and Xiubing Huang\*



11512

### Regulation of phenol oxidation into polymeric derivatives ready for flocculation using polyaluminum chloride

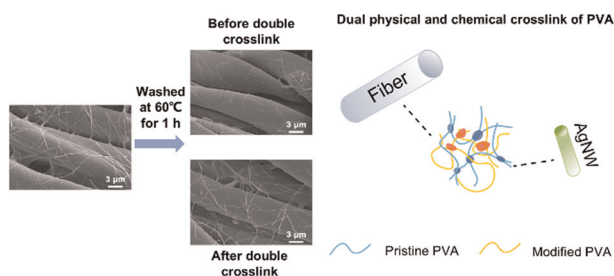
Yi Zhang, Kun-Lin Yang, Liangcan He and Shaoqin Liu\*



11520

### Improving the washability of conductive textiles by constructing a dually crosslinked polyvinyl alcohol network with silver nanowires

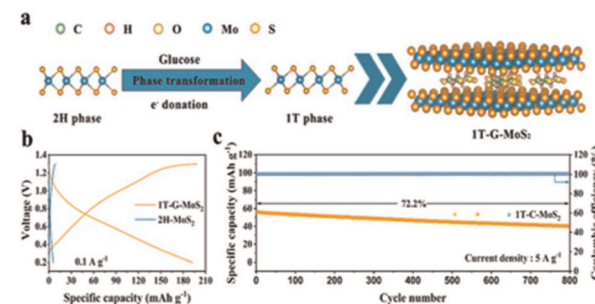
Qianru Ge, Qingyang Zeng, Shuxin Li and Shulin Ji\*



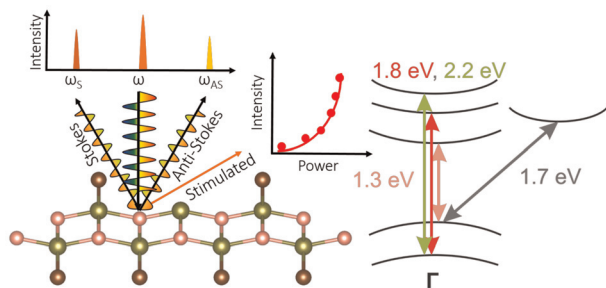
11530

### Glucose intercalation-induced 1T-G-MoS<sub>2</sub> hybrids for high-performance rechargeable aqueous zinc-ion batteries

Jia Sun, Zhiman Bai,\* Kun Tang, Peng Dai, Tongtong Jiang and Mingzai Wu\*



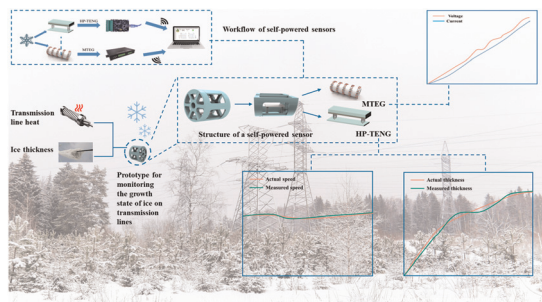
11539



### Resonance Raman scattering and anomalous anti-Stokes phenomena in CrSBr

Satyam Sahu,\* Charlotte Berrezueta-Palacios, Sabrina Juergensen, Kseniia Mosina, Zdeněk Sofer, Matěj Velický,\* Patryk Kusch\* and Otakar Frank\*

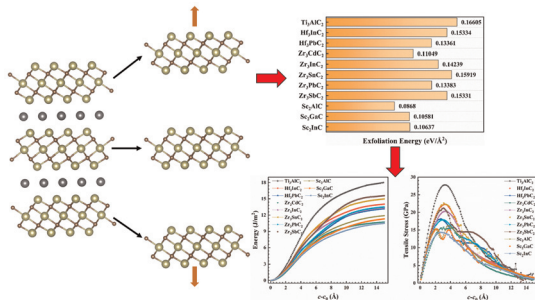
11547



### A self-powered ice growth sensing system for transmission lines based on a triboelectric nanogenerator and a micro thermoelectric generator

Yingli Lu, Changxin Liu,\* Yi Wang, Zhijie Hao, Chutian Chen, Bo Dong and Xun Zhou

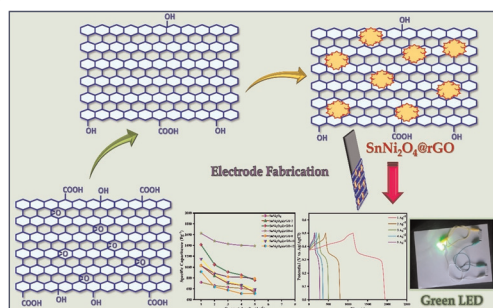
11564



### DFT insights into the role of A elements on the phase stability, crystal structure and properties of recently discovered M<sub>3</sub>AC<sub>2</sub> and Sc<sub>2</sub>AC

Kebin Qin, Hang Yin, Mingkai Li, Xiaodong He, Guangping Song, Yongting Zheng and Yuelei Bai\*

11578



### Structural modulation of tin nickelate nanostructures embedded in reduced graphene oxide for high-performance asymmetric supercapacitors

E. Murugan\* and F. Lyric

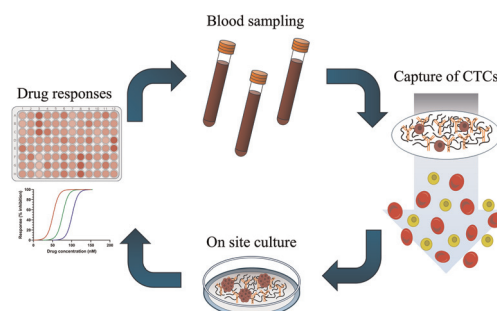


## PAPERS

11592

### Replication of patient specific circulating tumor cells on a microfibrinous filter for drug screening

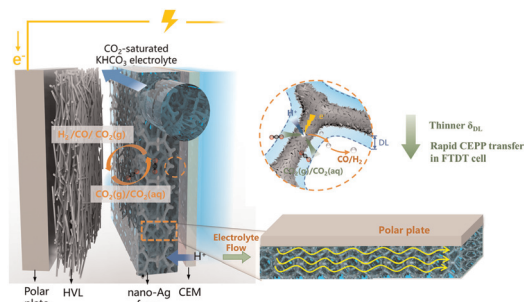
Grith Skovborg, Frederik Højbjerg Svejsø, Christoph Müller, Bjarke Nørrehvedde Jensen, Jesper Godrim Jensen, Sara Egsgaard Majidi, Cecilie Linneberg Matthiesen and Menglin Chen\*



11605

### Highly selective CO<sub>2</sub> electroreduction in an exsolution-induced flow cell using a hierarchical monolithic nano-Ag foam electrode

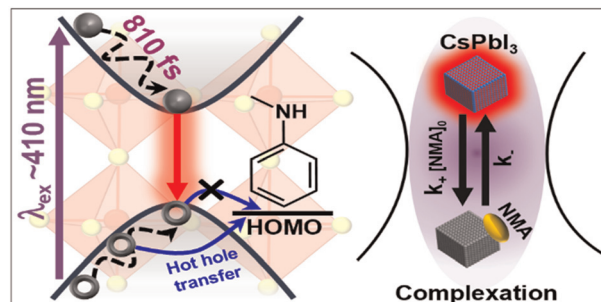
Yue Zhang, Yang Wang, Jun Li, Liang Zhang, Xun Zhu, Qian Fu\* and Qiang Liao



11615

### Hot carrier harvesting at the interface of CsPbI<sub>3</sub> nanocrystals

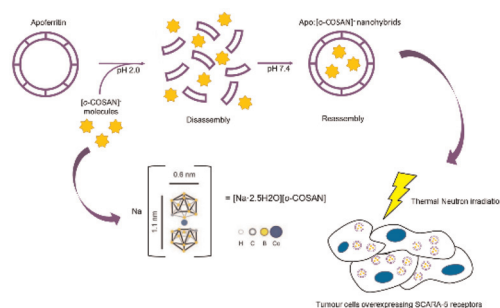
Debopam Acharjee, Shreya Mishra, Asit Baran Mahato, Mrinal Kanti Panda, Dipak Samanta and Subhadip Ghosh\*



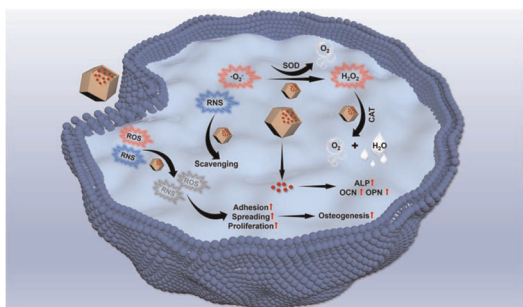
11624

### Cobaltabis(dicarbollide) [o-COSAN]<sup>-</sup> loaded apoferritin: an innovative high-capacity boron delivery system to target tumour cells for BNCT applications

D. Alberti, J. N. Piña Marcos, S. Rakhshan, N. Protti, S. Altieri, M. Nuez-Martínez, F. Teixidor, C. Viñas and S. Geninatti Crich\*



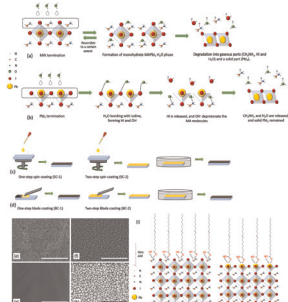
11634



### Precision reactive species scavenging enabled by engineered manganese-doped bimetallic MOF for tailored stem cell fate regulation

Ziyan Yu, Fanghua Zhang, Zhe Hao, Jinzheng Liu, Huan Guo, Xiyang Li, Ruizhong Zhang\* and Libing Zhang\*

11646

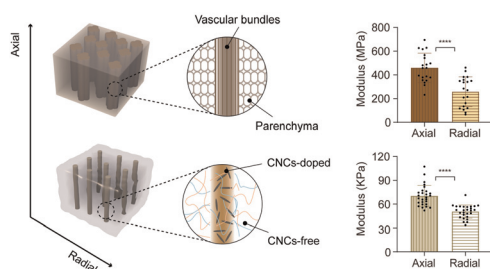


### The efficacy of oleic acid treatment in passivating MAPbI<sub>3</sub> films

Ghada Abdelmageed, Rashad F. Kahwagi, Joelle Korkomaz, Anthony El-Halaby, Adam F. G. Leontowich, Sean Hinds and Ghada I. Koleilat\*

11658

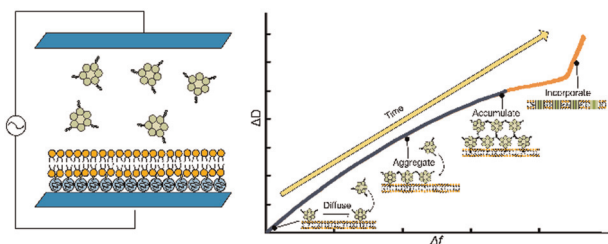
### Bamboo-Inspired Anisotropic Hydrogels



### Bamboo-inspired anisotropic hydrogels with enhanced mechanical properties *via* cellulose nanocrystal-reinforced heterostructures

Pengyan Wu, Zhengjie Zhang, Yan Hu, Yan Li, Tong Zhu, Yanxi Liu,\* Haitao Cui\* and Haijun Cui\*

11668



### Unraveling the time course of interaction between DNA nanopores and lipid bilayers using QCM-D: role of cholesterol anchors and bilayer supporting substrates

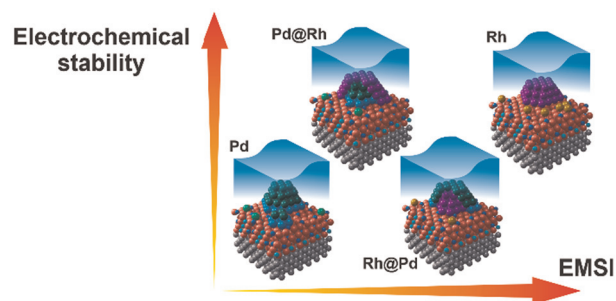
Zugui Peng,\* Glenn Villena Latag, Hiroyuki Tahara, Tohru Yagi\* and Tomohiro Hayashi\*



11679

### Stability of multifunctional Pd–Rh electrocatalysts supported on $\text{Co}_3\text{O}_4(111)$ in alkaline environment: impact of the electronic metal–support interaction

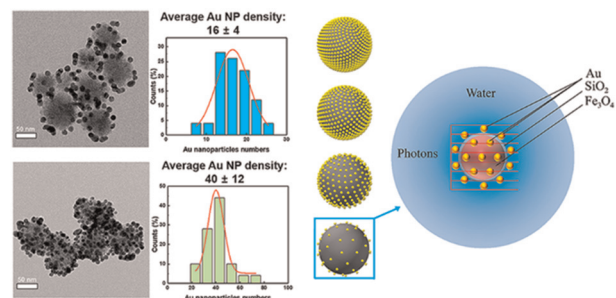
Alexander Simanenکو, Jan Škvára, Pankaj Kumar Samal, Evanie Franz, Robert Hübsch, Tomáš Skála, Nataliya Tsud, Sascha Mehl, Daniel Schauermann, Viktor Johánek, Josef Mysliveček, Olaf Brummel, Yaroslava Lykhach\* and Jörg Libuda



11691

### Secondary electron dynamics in core–shell–satellite nanoparticles: a computational strategy for targeted cancer treatment

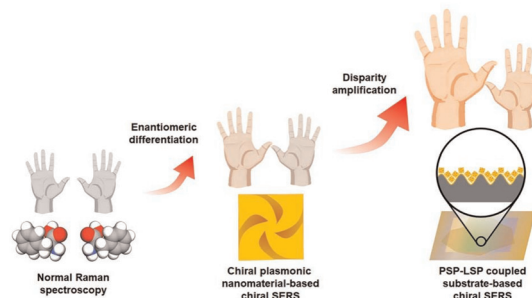
Nikita Sergeevich Markin, Ivan Sergeevich Gordeev, Hong En Fu, Sergey Igorevich Ivannikov, Yeon Beom Kim, Alexey Yurievich Samardak, Alexander Sergeevich Samardak, Young Keun Kim\* and Alexey Vyacheslavovich Ognev



11703

### Disparity-amplified chiral SERS using a PSP–LSP-coupled substrate

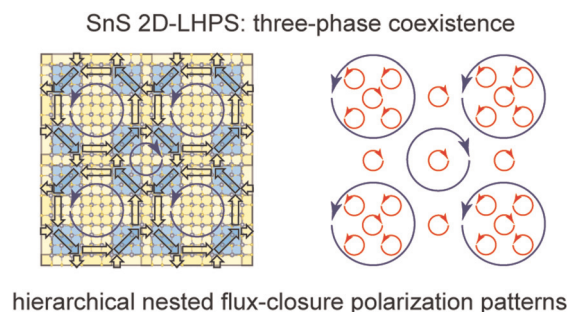
Chiyi Wei, Yanlong Li, Haijiao Xu, Molei Hao, Tianxi Wang, Weiyuan Huang, Wanlu Cao, Zihao Li,\* Xiaoming Wei and Zhongmin Yang



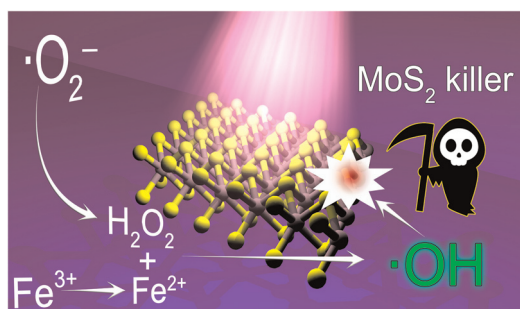
11712

### Lateral heterophase electric polar topological superstructures of monolayer SnS: a first-principles computational study

Bo Xu, Ning Ma, Junkai Deng\* and Jefferson Zhe Liu\*



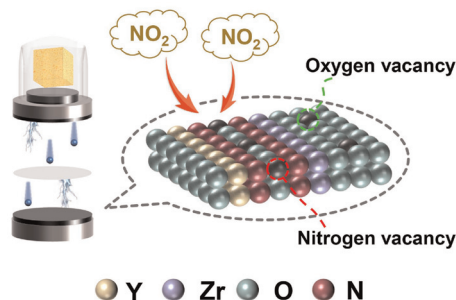
11721



### Photoactivated defect engineering and nanostructure functionalization of MoS<sub>2</sub> via a photochemical Fenton process

Tuan-Hoang Tran, Raul D. Rodriguez,\* Aura Garcia, Qiang Ma, Tao Zhang, Ranran Wang and Evgeniya Sheremet

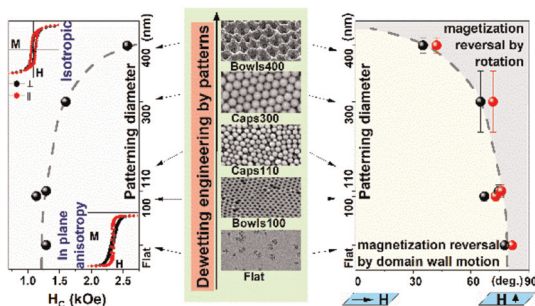
11731



### Ternary metal oxynitride Y<sub>2</sub>Zr<sub>2</sub>O<sub>7-x</sub>N<sub>x</sub> for selective NO<sub>2</sub> electrochemical sensing

Xichao Mo, Jinyang Hu, Zhaorui Zhang, Jiaxin Li, Chonghui Zhu, Congling Yin, Jinkui Chu and Minghui Yang\*

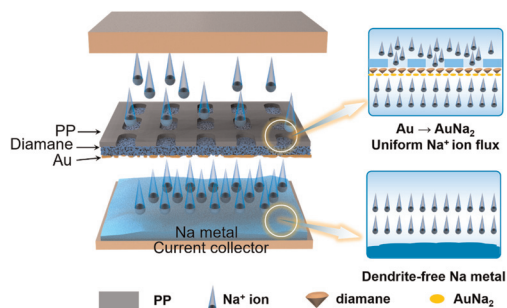
11739



### Phase transformations and magnetism in patterned FePd thin films

Arkadiusz Zarzycki,\* Marcin Perzanowski, Michal Krupinski and Marta Marszalek

11752



### Sodiophilic Au-diamane polypropylene separator enabled dendrite-free sodium metal batteries

Gang Zhi, Zhanwei Hu, Gaojie Zhou, Zhuangfei Zhang, Hui Wang, Dezhi Kong, Tingting Xu, Xinjian Li\* and Ye Wang\*

