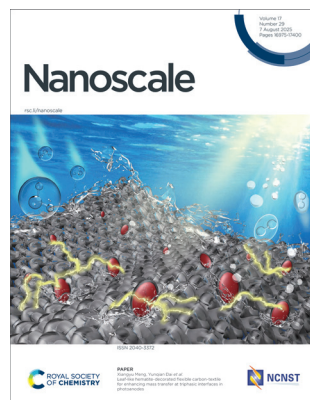


IN THIS ISSUE

ISSN 2040-3372 CODEN NANOHL 17(29) 16975–17400 (2025)



Cover

See Xiangyu Meng,
Yunqian Dai *et al.*,
pp. 17086–17096.

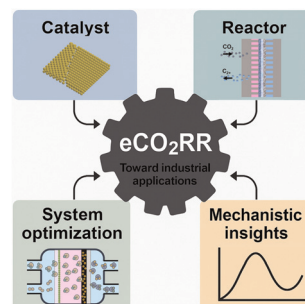
Image reproduced
by permission of
Yunqian Dai
from *Nanoscale*,
2025, **17**, 17086.

REVIEW

16988

Advancing electrocatalytic CO₂ reduction: key strategies for scaling up to industrial applications

Lei Wang and Yimin Wu*

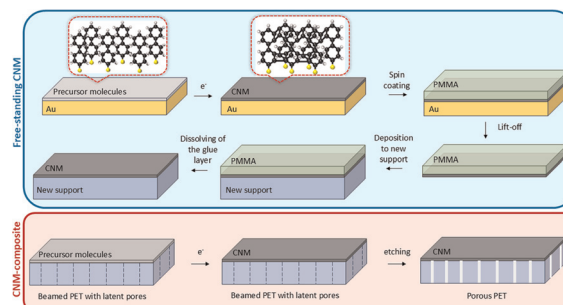


MINIREVIEW

17004

Advances in carbon nanomembranes for separation: from free-standing films to composite structures

Ana Ambrož, Albert Schnieders, Claus Hélix-Nielsen,
Armin Götzhäuser* and Irena Petrinic



RSC Applied Interfaces

GOLD
OPEN
ACCESS

**Interfacial and surface research
with an applied focus**

Interdisciplinary and open access

rsc.li/RSCApplInter

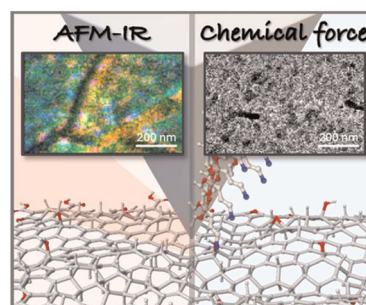
**Fundamental questions
Elemental answers**

COMMUNICATIONS

17016

Nanoscale chemical characterization of functionalized graphene by heterodyne AFM-IR and chemical force microscopy

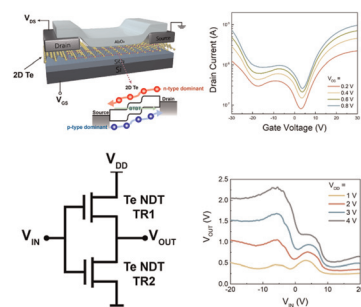
Reiji Kumagai, Mariko Takahashi, Nozomu Suzuki, Kenji Hirai, Hirohmi Watanabe, Hiroshi Uji-i and Yasuhiko Fujita*



17024

A CMOS-integrable ambipolar tellurene nanofilm-based negative differential transconductance transistor for multi-valued logic computing

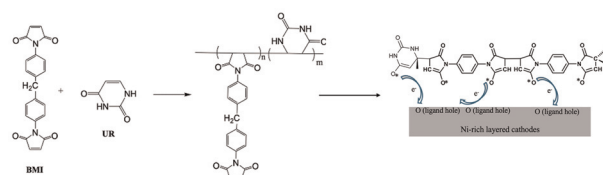
Jihoon Huh, Yuna Kim, Bolim You, Mino Yang, Unjeong Kim,* Myung Gwan Hahm,* Min-Kyu Joo* and Moonsang Lee*



17033

Investigation of the oxygen ligand hole of Ni-rich layered cathodes: a new organic coating for enhancing battery performance

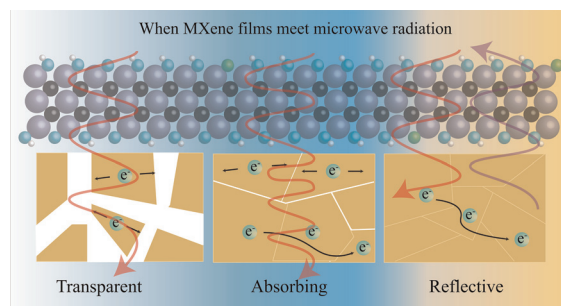
Fu-Ming Wang,* Laurien Merinda, Nan-Hung Yeh, Rio Akbar Yuwono, Hao-Hsuan Hsia, Chusnul Khotimah and Nae-Lih Wu



17040

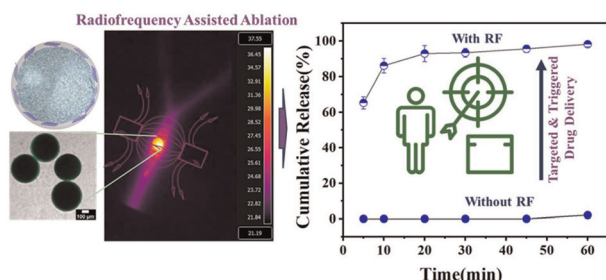
Ultrathin MXene conductive films with percolation-driven electron transport and thickness-dependent microwave absorption/shielding dual functionality

Dong Wen, Xu Zhou, Qianqian Fan, Can Cui, Kan Fang, Ling Ding, Xiaoi Ye, Shihao Zheng, Zhaokun Jiang, Yanke Zhou, Daqiang Zhao and Gui-Gen Wang*



COMMUNICATIONS

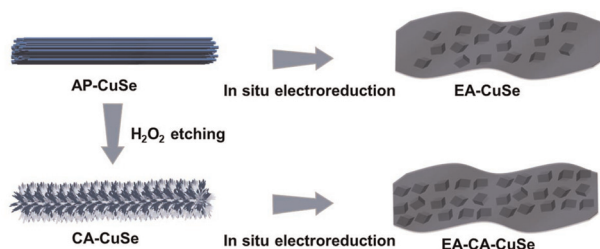
17057



Radiofrequency-triggered release of therapeutics from graphene oxide-loaded polysaccharide based core-shell microspheres

Aiswarya Thattaru Thodikayil, Agni Kumar Biswal, Aniruddh Vashisth and Sampa Saha*

17075

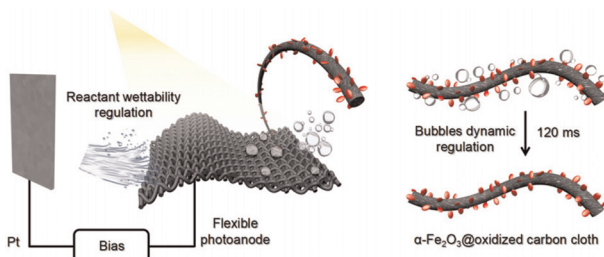


Electrochemical restructuring of H_2O_2 activated copper selenide for CO_2 reduction

Wenjian Hu, Deema Balalta, Zhiyuan Chen, Imran Abbas, Jia Song, Balázs Barhács, Márton Guba, Tibor Höltzl, Francesco D'Acapito, Thomas Altantzis, Jan Vaes, Sara Bals, Didier Grandjean,* Deepak Pant* and Ewald Janssens*

PAPERS

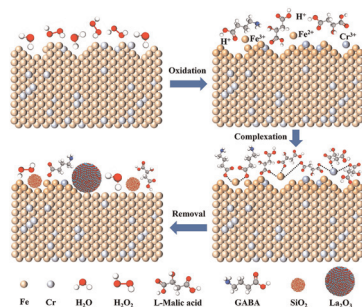
17086



Leaf-like hematite-decorated flexible carbon-textile for enhancing mass transfer at triphasic interfaces in photoanodes

Zhou Zhou, Mengmeng Zhu, Chengkun Song, Mingyu Tang, Shujing Li, Xiangyu Meng,* Yueming Sun and Yunqian Dai*

17097



A close atomic surface of stainless steel produced by novel green chemical mechanical polishing using silica and lanthana mixed abrasives

Yaowen Wu, Dong Wang, Zhenyu Zhang,* Feng Zhao, Hongxiu Zhou,* Xiuqing Liu and Xiaofei Yang*

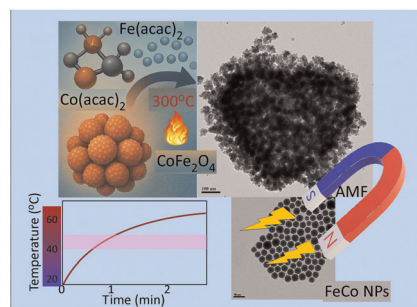


PAPERS

17110

A parametric study on CoFe-based ferrite and alloy nanoparticle synthesis

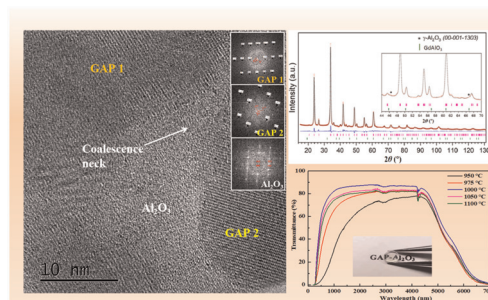
Andreas Sergides, Catherine Amiens, Sergio Gómez-Graña, Antonios Makridis, Liudmyla Storozhuk, Stefanos Mourdikoudis* and Nguyen Thi Kim Thanh*



17127

Transparent perovskite-based nanoceramics elaborated from full glass crystallization

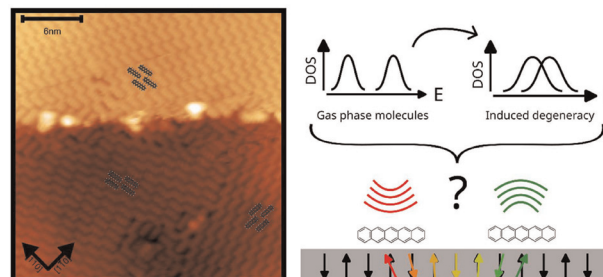
Jie Fu, Guoguo Zhang, Hanyu Zou, Chengzhi Wang, Cécile Genevois, Emmanuel Veron, Mathieu Allix* and Jianqiang Li*



17137

Electronic and structural coupling of pentacene on NiO(001)

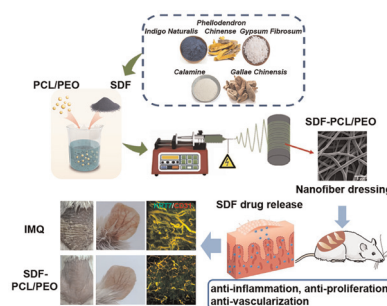
Jonah Elias Nitschke, David Maximilian Janas, Stefano Ponzoni, Michele Capra, Elena Molteni, Andrea Picone, Alessio Giampietri, Alessandro Ferretti, Shuangying Ma, Alberto Brambilla, Giovanni Zamborlini,* Guido Fratesi* and Mirko Cinchetti



17146

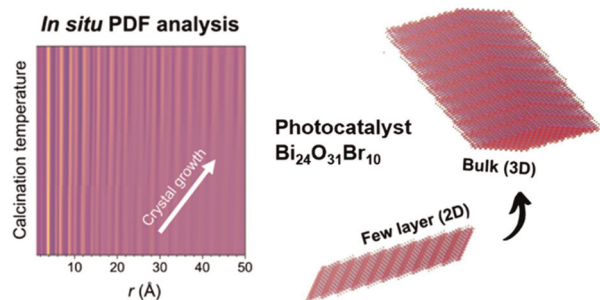
Electrospun natural product-based Shidu Formula for the management of psoriasis

Ruodan Xu,* Mengyuan Zhou, Yi Tang, Can Cao, Yanxin Jiang, Jing Li, Chen Wang, Xi Wu, Ping Song and Ning Li*



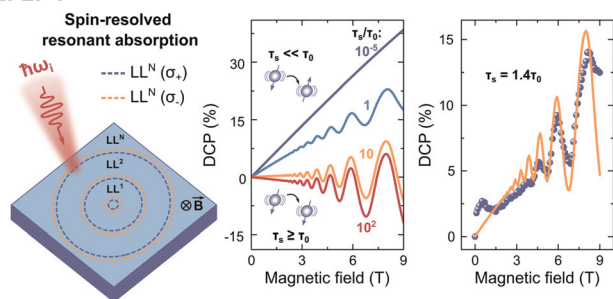
PAPERS

17159

Tracking 2D-to-3D crystal growth of a layered material *in situ* with X-ray scattering

Melissa Jane Marks, Sara Frank, Martin Lahn Henriksen, Henrik Særkjær Jeppesen and Nina Lock*

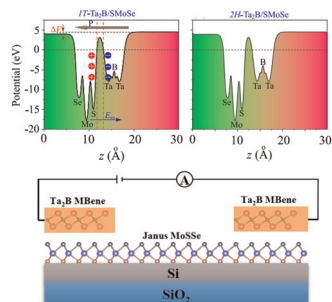
17174



Optical spin polarization by coherent magnetoabsorption generation

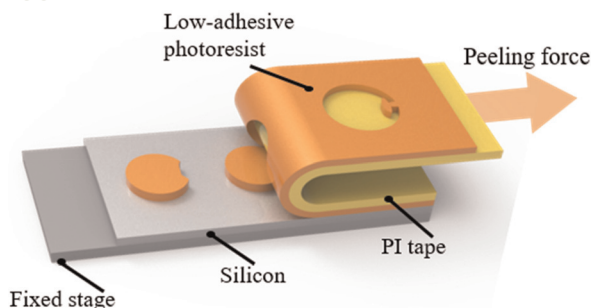
Gabriel M. Jacobsen, Vinicius A. Oliveira, Baolai Liang, André Pelais, Hryhorii V. Stanchu, Morgan E. Ware, Gregory J. Salamo, Yuriy I. Mazur, Gilmar. E. Marques, Victor Lopez-Richard and Marcio D. Teodoro*

17182

Electronic properties and interfacial engineering of metal–semiconductor 1T-, 2H-Ta₂B MBene/Janus MoS₂ heterostructures

Pham T. Truong, Nguyen N. Hieu,* Hieu V. Nguyen, Cuong Q. Nguyen, Tran P. T. Linh, Huynh V. Phuc and Chuong V. Nguyen*

17193

Asymmetric fractures enabled fracture diodes *via* dry patterning

Cuihong Liu, Lei Chen, Peng Liu, Zhi Li, Zhiwen Shu, Fu Fan, Nianqi Zhang, Chaohua Li, Bo Feng* and Huigao Duan

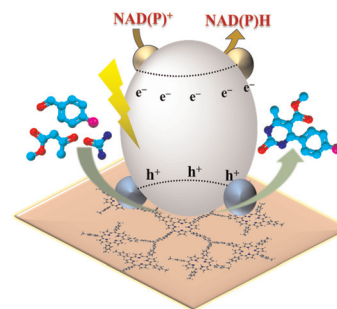


PAPERS

17205

Using a newly designed porphyrin photocatalyst based on triptycene to emulate natural photosynthesis for regioselective fixation of NAD(P)^+ to NAD(P)H and synthesis of value-added chemicals

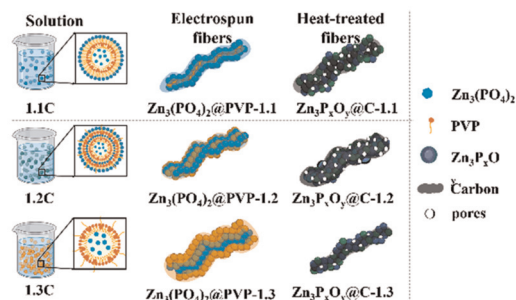
Rehana Shahin, Rajesh K. Yadav,* Shaifali Mishra, Kanchan Sharma, Wonil Seo, Joonghan Kim, Navneet K. Gupta and Jin Ook Baeg*



17217

Precursor concentration-driven structural evolution and phosphate distribution in electrospun zinc phosphate–carbon nanofibers for lithium-ion storage

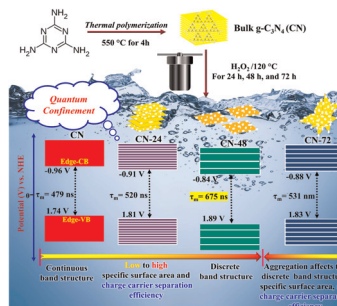
Yrysul Sagynbay, Long Kong, Zhumabay Bakenov and Ayaulym Belgibayeva*



17228

Innovative non-toxic exfoliation of bulk $\text{g-C}_3\text{N}_4$ into ultra-thin 1D/2D nanosheets and nanotubes for accelerated sunlight-driven photocatalysis

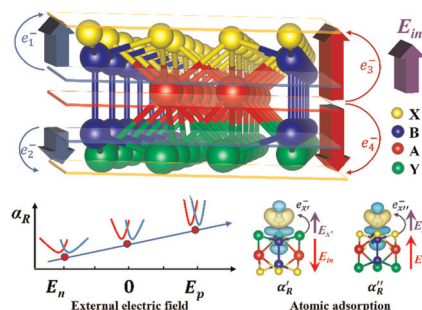
Sandeep Eswaran Panchu, Saranya Sekar, Sangeeth Jhon, Sarojini Jeeva Panchu, Thanigai Arul Kumaravelu, Hendrik C. Swart, Moorthy Babu Sridharan, Shubra Singh, Chung-Li Dong and Narayana Kalkura Subbaraya*



17247

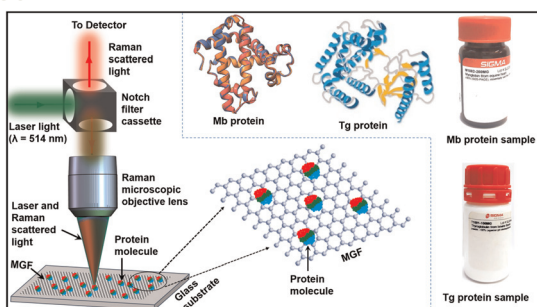
Rashba effect modulation in two-dimensional $\text{A}_2\text{B}_2\text{Te}_6$ ($\text{A} = \text{Sb}$ and Bi ; $\text{B} = \text{Si}$ and Ge) materials via charge transfer

Haipeng Wu, Qikun Tian, Jinghui Wei, Ziyu Xing, Guangzhao Qin and Zhenzhen Qin*



PAPERS

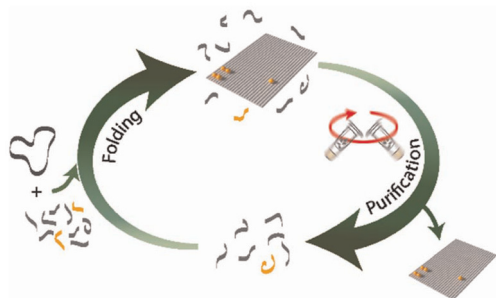
17256



Investigation on thyroglobulin and myoglobin using graphene-enhanced Raman spectroscopy as a tool

Anamika Sharma and Venkata Ramanaiah Dantham*

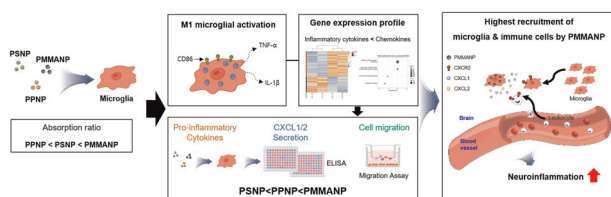
17265



Cost-efficient folding of functionalized DNA origami nanostructures *via* staple recycling

Emilia Tomm, Guido Grundmeier and Adrian Keller*

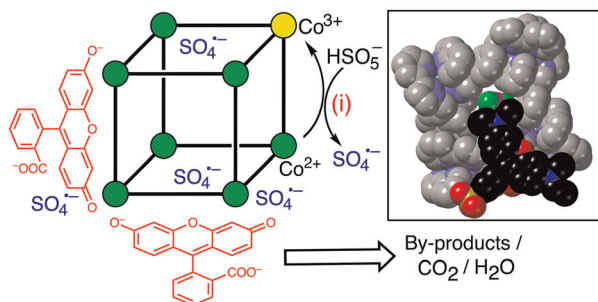
17274



Type-dependent effects of nanoplastics on microglial activation and CXCR2-mediated chemotactic migration

Jahong Koo, Bohyeon Jeong, Jeong Yeob Baek, Wang Sik Lee, Jiyoung Gong, Subin Park, Jiyeon Hong, Yugyeong Sim, Dae Soo Kim, Sang Ryong Kim, Jinyoung Jeong* and Da Yong Lee*

17285



An investigation into catalysed xanthene-based dye oxidation by a family of coordination cages

James R. Williams and Michael D. Ward*

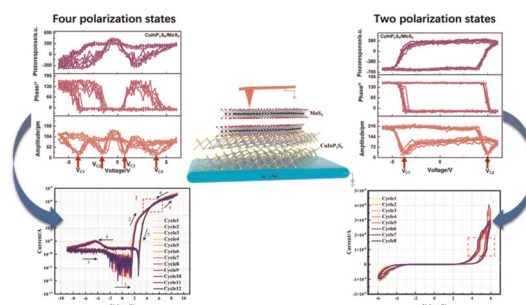


PAPERS

17294

Anomalous ionic conduction in ferroelectric semiconductor junctions comprising multistate CuInP_2S_6

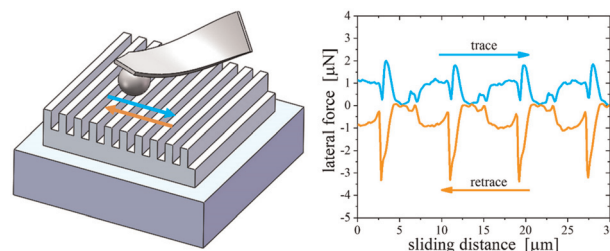
Jiarui Liu, Qiaoqiao Wang, Hao Feng, Yongyi Wu, Yan Li, Feiyan Hou, Tai Min* and Tao Li*



17303

Refining the friction force through periodically grooved surfaces

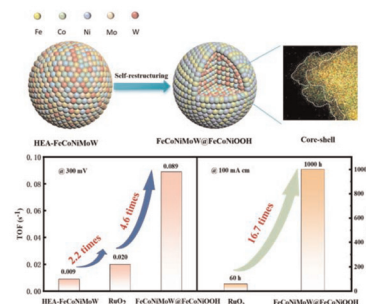
Zhiyong Wei,* Dong Han, Qi Wang, Yixiao Lu, Yi Tao, Xi Lu and Shuang Cai*



17312

Self-reconstruction of FeCoNiMoW high entropy alloy to boost OER activity with robust stability for anion exchange membrane water electrolyzer

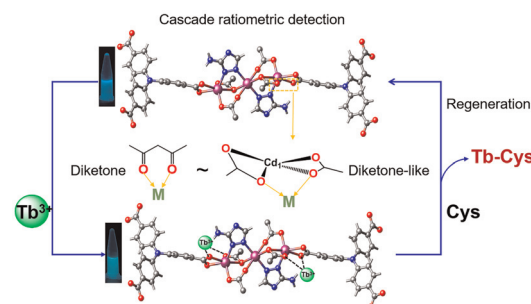
Lili Guo, Yanan Huang, Yue Qin, Bin Chen, Chang Liu, Hao Chen, Junfeng Zhang, Xiangwen Zhang and Qingfa Wang*



17324

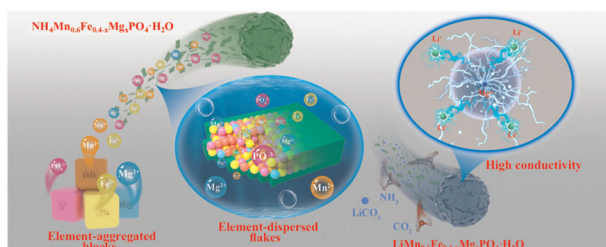
Recyclable luminescent metal–organic frameworks with self-formed diketone-like sites for cascade ratiometric detection

Li Pei, Jieming Zhang, Wenqin Ding, Jian Wang,* Fangmin Huang, Yanhong Liu,* Ziran Liu,* Yafei Gao and Pengyan Wu*



PAPERS

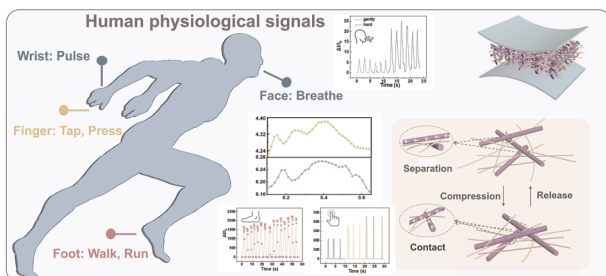
17334



Understanding the construction of nano-structured $\text{LiMn}_{0.6}\text{Fe}_{0.4}\text{PO}_4$ by a co-precipitation strategy and Mg^{2+} doping towards high-performance lithium-ion batteries

Jie Wu, Liuquan Hu, Zhuang Hu, Wentian Yi, Zhe Mu, Jinjin Zhang, Yuede He,* Jilei Liu* and Changling Fan*

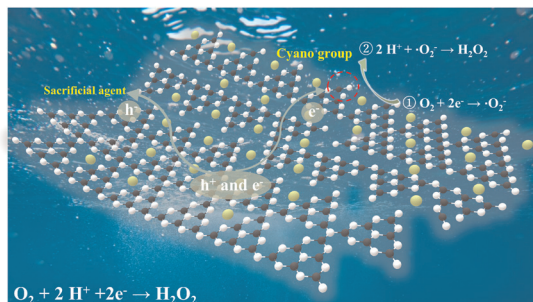
17345



Wide-range human physiological signal acquisition with carbonized composite nanofibers

Jing Dai, Haozhen Li, Longcheng Que,* Guangzhong Xie* and Yuanjie Su*

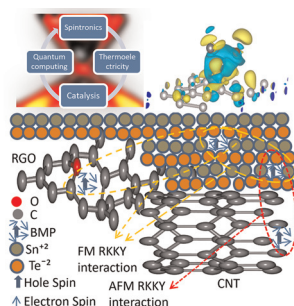
17355



Efficient photochemical production of H_2O_2 on carbon nitride photocatalysts with the optimized multi-synergistic effect of enhanced visible light absorption, charge separation, and surface kinetics

Jiaqiao Hu, Xing Wang, Xingang Kong, Shinobu Uemura, Takafumi Kusunose, Yasuhiro Tanaka and Qi Feng*

17369



Study of defect-induced magnetic anisotropy in MWCNT and RGO dispersed SnTe using spin resonance and magnetic measurement

Subhadip Ghosh,* Shivam Shukla and Sanjeev Kumar Srivastava

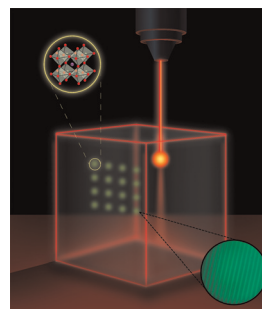


PAPERS

17384

Erasable laser 3D printing of stable perovskite CsPbBr₃ nanocrystals in fluorophosphate glass

Natalia K. Kuzmenko,* Lev S. Logunov,
Elena V. Kolobkova, Nikolay V. Nikonorov,
Sergey V. Makarov, Maria S. Kuznetsova,
Matvey N. Bataev and Evgenii V. Ubyivovk



CORRECTIONS

17397

Correction: Self-patterning of liquid Field's metal for enhanced performance of two-dimensional semiconductors

Kwanghee Han, Heeyeon Lee, Minseong Kwon, Vinod Menon, Chaun Jang and Young Duck Kim*

17398

Correction: Controllable synthesis of hollow mesoporous organosilica nanoparticles with pyridine-2,6-bis-imidazolium frameworks for CO₂ conversion

Ghazale Anvarian-Asl, Sadegh Joudian, Stefano Todisco, Piero Mastroilli and Mojtaba Khorasani*

