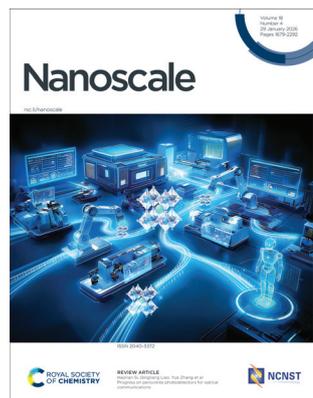


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ISSN 2040-3372 CODEN NANOHL 18(4) 1679–2292 (2026)



Cover

See Haonan Si, Qingliang Liao, Yue Zhang *et al.*, pp. 1693–1739.

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REVIEWS

1693

Progress on perovskite photodetectors for optical communications

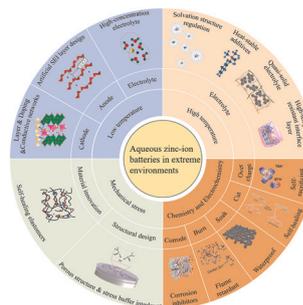
Jingna Ren, Boyu Wan, Qiang Cheng, Renquan Geng, Xuan Zhao, Haonan Si,* Qingliang Liao* and Yue Zhang*



1740

Advances and challenges in aqueous zinc-ion batteries for extreme environmental adaptability

Enxi Shi, Hongmei Cao,* Yiyuan Hua, Adila Abulimiti, Jie Zhao, Can Cui, Weiji Dai, Cuijiao Zhao, Yudong Zhang* and Saifang Huang*



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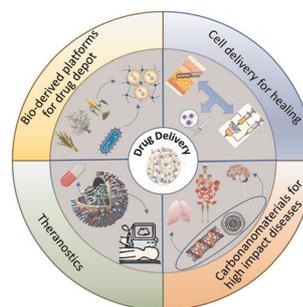
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REVIEWS

1765

Advances in nanomedicine: from design and formulation to regenerative application and theranostics

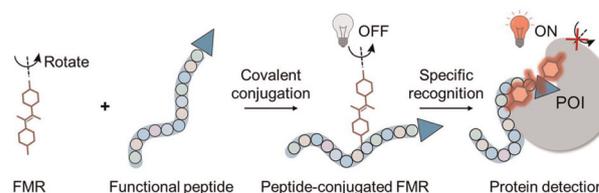
Gesmi Milcovich,* Carolina F. Jesus, Margarida I. M. Esteves, Francesco Calzaferri, Filipe E. Antunes, Luigi Di Rosa, Sara Baldassano, Sonya Vasto, Sevcan Gazi, Marc A. Fernández-Yagüe, Sofia Dominguez-Gil and Silvia Giordani



1803

Peptide-conjugated fluorescent molecular rotor for subcellular protein detection

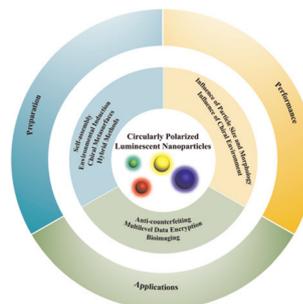
Hao Fang, Feng Wu, Shiqian Hao, Quan Wang, Yong Cheng,* Fan Xia and Xiaoding Lou*



1819

Circularly polarized luminescent nanoparticles: preparation, performance and applications

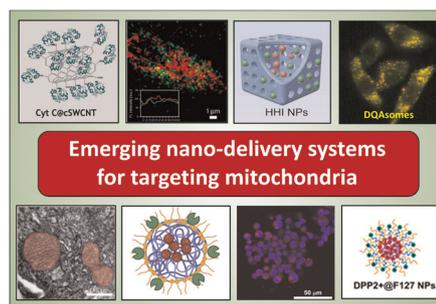
Xiaobin Gao, Aoqi Wang, Biao Zhao* and Jianping Deng*



1835

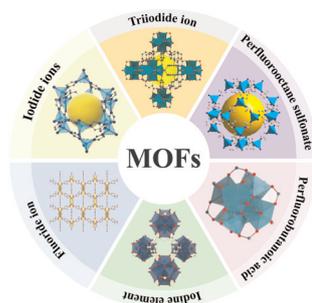
Emerging nano-delivery systems for targeting mitochondria

Agata N. Burska, Kristina E. Raish, Dinmukhamet Bayandy and Vesselin N. Paunov*



REVIEWS

1865

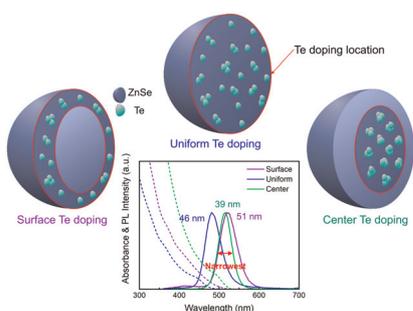


Research progress on the removal of iodine and fluoride by metal–organic frameworks

Fengting Chen, Tian Peng, Mingzhu Xia,*
Fengyun Wang* and Fenghe Wang*

COMMUNICATIONS

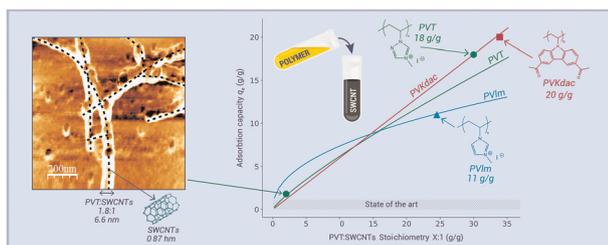
1898



Control of the photoluminescence bandwidth of ZnTeSe quantum dots by suppressing the Te cluster effect

Jinchul Park, Yonghyeok Choi, Kangwoo Lee,
Jinseop Yoon, Eunjoo Jang* and Heeyeop Chae*

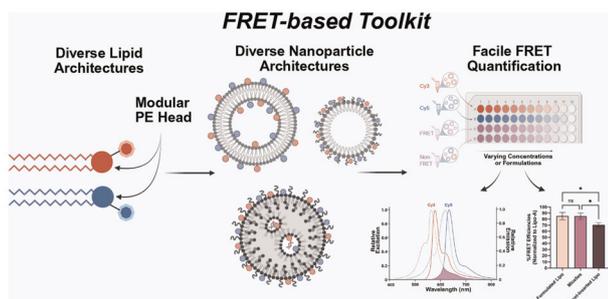
1905



Unprecedented polyvinyl polymer loading on SWCNTs in the liquid phase

Leshan Usgodaarachchi, Eleftheria Zelou,
Vikraman Haribaskar, Yuchen Yang, Eftychia Grana,
Nicolas Battaglini, Samia Zrig, Eric Cloutet, Benoit Piro
and Bérengère Lebental*

1924



A FRET-based toolkit for quantifying lipid incorporation into nanoparticles

Plinio D. Rosales, Amartya Viravalli, Anna Schneider and
Natalie Boehnke*

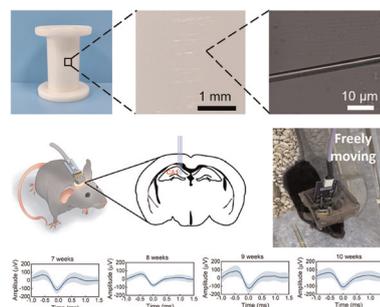


PAPERS

1934

A flexible and biocompatible trilayer coaxial heterogeneous structure microfiber electrode for long-term electrophysiological recordings in freely moving mice

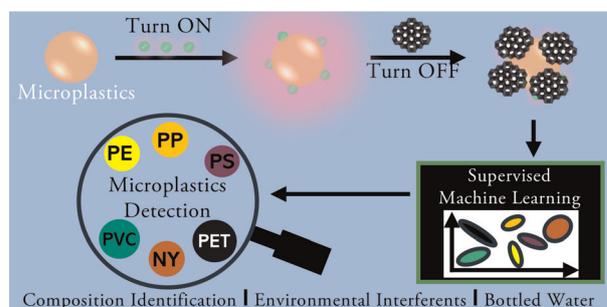
Jieyu Huang, Xilin Li, Jingjing Jiang, Jinbo Wang, Sendong Zhou, Yongchun Liang, Yichen Liang, Xiaowei Chen, Hailan Chen, Haolun Wang, Han Qin* and Sen Lin*



1944

Detection of microplastics through an optical sensor array using nano-graphene oxide and fluorophore conjugates

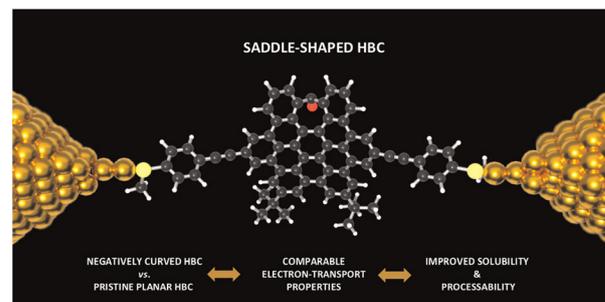
Osik Tayeng, Pradipta Behera* and Mrinmoy De*



1957

Electron transport through negatively curved nanographenes

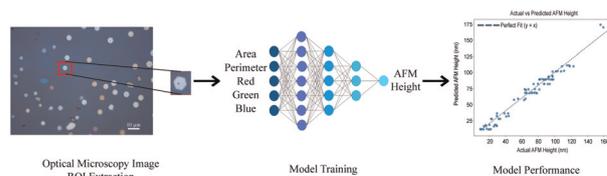
Lucía Palomino-Ruiz,* Juan P. Mora-Fuentes, Silvia Castro-Fernandez, Irene R. Márquez, Juan M. Cuerva, José Catalán-Toledo, Marta Mas-Torrent, Núria Crivillers, Edmund Leary, Alba Millán, Linda A. Zotti,* M. Teresa González* and Araceli G. Campaña*



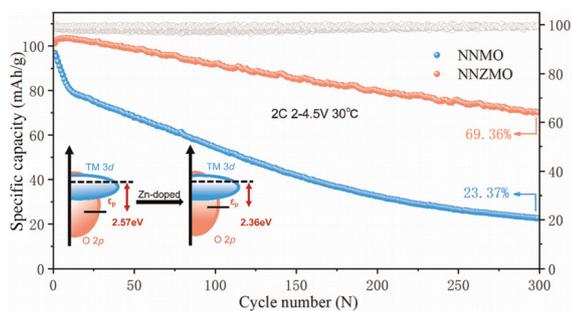
1965

High-throughput thickness analysis of 2D materials enabled by intelligent image segmentation

Jun Chen Ng, Farina Muhamad, Pauline Shan Qing Yeoh, Ziyi Han, Zanlin Qiu, Khin Wee Lai* and Xiaoxu Zhao*



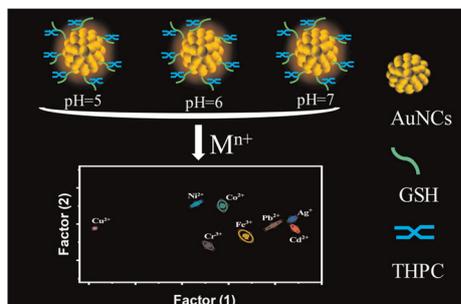
1975



Element doping-driven band regulation toward stable 4.5 V sodium-ion layered oxides

Keyu Pan, Hailong Yang, Xiufang Zheng, Binwei Zhang* and Baodan Zhang*

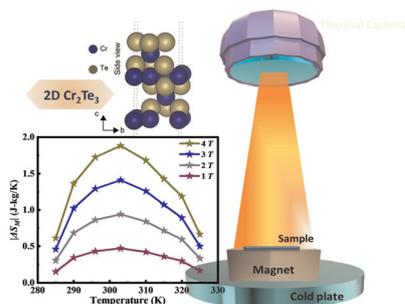
1986



Tetramethylolphosphonium chloride-inspired gold nanoclusters endow a heavy metal ion sensor array by pH-regulated surface ligand–metal chelation

Junqi Cheng, Jingxin Yu, Fengniu Lu, Ding Cao, Zhiqin Yuan* and Chao Lu*

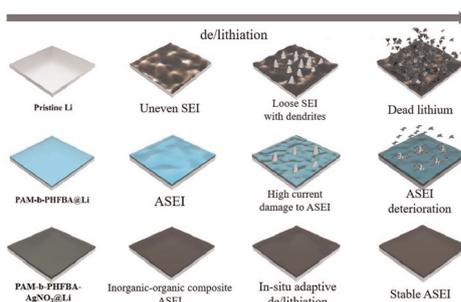
1994



Magnetocaloric effect observations near room temperature in few-layered chromium telluride (Cr_2Te_3)

Nishant Tiwari, Chinmayee Chowde Gowda, Subhendu Mishra, Prafull Pandey, Saikat Talapatra, Varun Chaudhary, Abhishek K. Singh* and Chandra Sekhar Tiwary*

2008



A robust *in situ* adaptive artificial interface for dead-lithium-free lithium metal batteries

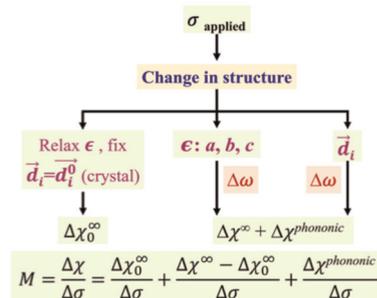
Chengkai Yang,* Jing Luo, Jiajie Wu, Borong Li, Yichen Li, Dehuan Shi, Yanbin Qiu, Xinyu Zheng, Qian Wang,* Zheyuan Liu* and Shuming Duan*



2020

Origins of electrostriction of MoS₂ and HfS₂ in 2 and 3 dimensional 1T and 2H structures

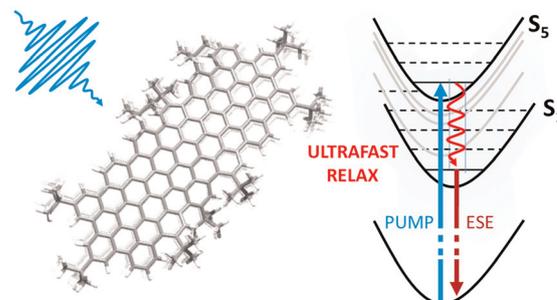
K. Debnath, A. K. Sood and U. V. Waghmare*



2030

Ultrafast dynamics of relaxation in well-dispersed quantum-confined nanographenes

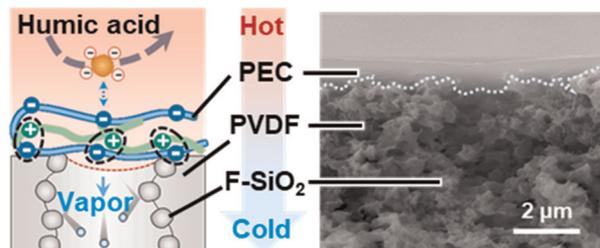
Sébastien Quistrebart, Daniel Medina-Lopez, Cynthia Banga-Kpakko, Thanh Trung Huynh, Stéphane Campidelli, Jean-Sébastien Lauret and Elsa Cassette*



2038

Negatively charged Janus membranes with robust pore anti-wettability for stable membrane distillation of seawater

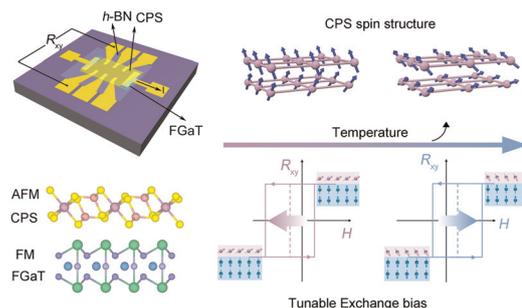
Yuxiang Zhu, Yuxin Zhang, Wenbiao Zhou, Yiting Liang, Xiao Chen* and Pengchao Zhang*



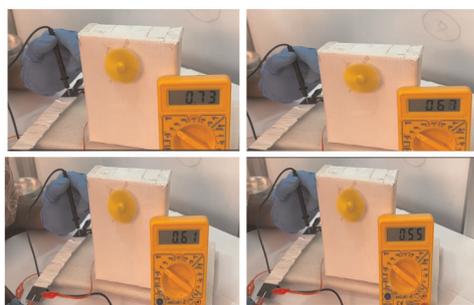
2046

The manipulation of exchange bias in van der Waal ferromagnetic/antiferromagnetic heterojunction by interfacial coupling

Guangcheng Wang, Lin Ma, Zijing Zhao, Shuaizhao Jin, Siyu Wang, Yao Yao, Meijiao Men, Pengying Chang, Yingzhou Yan, Yiyang Xie, Danmin Liu, Xueyun Wang and Xiaolei Wang*



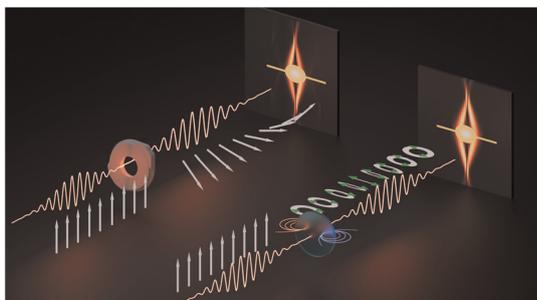
2055



Enhanced electrochemical performance of ammonium phosphomolybdate for symmetric and asymmetric supercapacitors in an H₂SO₄/KI redox additive electrolyte

S. Mohammed Eliyas, R. Yuvakkumar,* G. Ravi,*
A. Deepak, R. Shankar and Dhayalan Velauthapillai

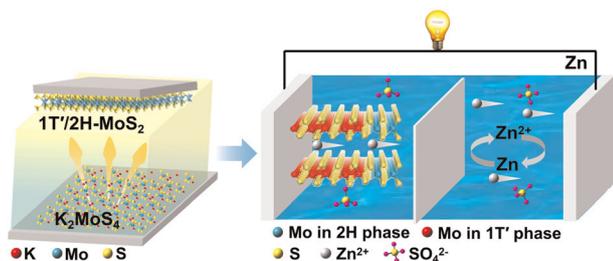
2076



Spatio-temporal weak measurement of a chiral ultra-short laser pulse

Sahil Sahoo, Andre Yaroshevsky, Dima Cheskis and Yuri Gorodetski*

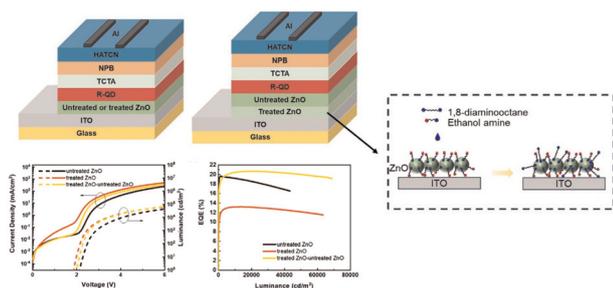
2084



Phase-engineered 1T'/2H-MoS₂ heterophase junctions for high-performance aqueous zinc-ion batteries

Xue-Wei Lu, Xuetao Li, Ruxuan Chen, Shuwei Wang,
Zile Wang and Cong Chao*

2097



Inverted red quantum dot light-emitting diodes with a dual-layer ZnO electron transport layer

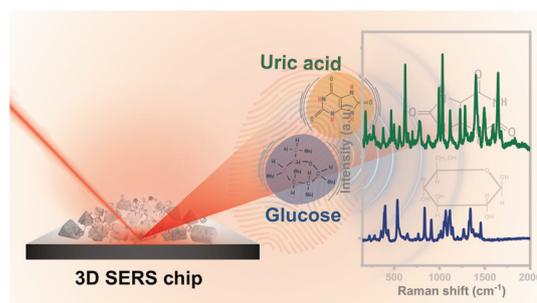
Depeng Li, Jingrui Ma, Xiangwei Qu, Lei Jin,* Kai Wang*
and Xiao Wei Sun*



2106

Ultra-low limits of detection for glucose and uric acid using 3D silver nanostructures decorated with bimetallic (AgAu) nanoparticles as SERS sensors

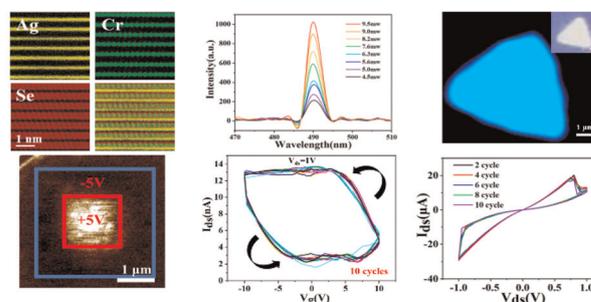
Jithin Kundalam Kadavath, Bindu Krishnan, Rene Fabian Cienfuegos Pelaes, David Avellaneda Avellaneda, Selene Sepúlveda Guzman, Nora Aleyda Garcia-Gomez and Sadasivan Shaji*



2119

Discovery of robust interlocked ferroelectricity in 2D AgCrSe₂ via chemical vapor deposition

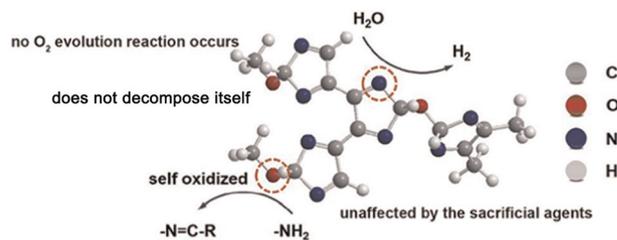
Zhongshi Zhang, Jing Xia,* Xuanze Li, Lifeng Tian, Suijiang Cai, Jing Li, Qing Meng, Jiangtao Li, Chang Liu and Xiangmin Meng*



2131

Metal-free carbon dots toward bio-green hydrogen evolution via photocatalysis

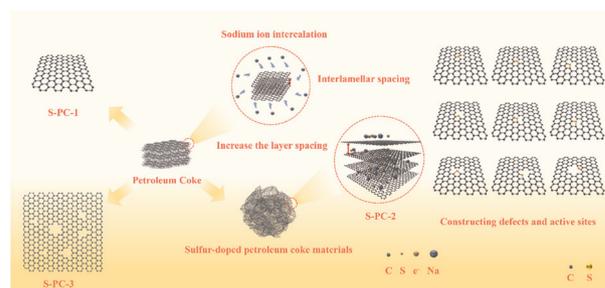
Jiaxuan Wang, Shuang Feng, Tiwei He, Zenan Li, Tianyu Shi, Tao Cheng,* Hui Huang,* Yang Liu* and Zhenhui Kang*



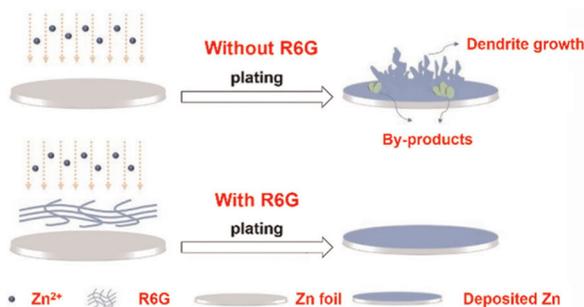
2144

Scalable synthesis of nano-structured sulfur-doped petroleum coke with high-rate capability and long cyclability for sodium-ion batteries

Yanlu Lv, Lin Yang* and Yanjun Zhong



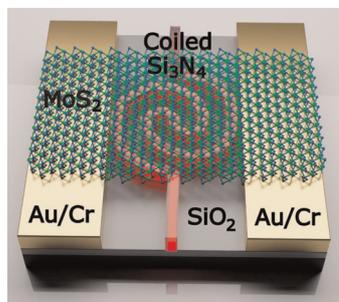
2165



Synergistic regulation of the Zn²⁺ solvation environment and interfacial stability using a rhodamine 6G additive in aqueous zinc ion batteries

Nuo Nian, Lijun Li,* Liping Qin,* Yibo Hao, Lei Liu, Zijie Xu and Guozhao Fang

2176



Ultracompact on-chip coiled waveguide-integrated photodetectors enabled by 2D materials with enhanced responsivity

Maaz Ahmed Qureshi,* Fooqia Khalid, Janvit Tippinit, Faisal Ahmed, Md Gius Uddin, Abde Mayeen Shafi, Xiaoqi Cui, Matthieu Roussey, Zhipei Sun, Harri Lipsanen and Markku Kuittinen

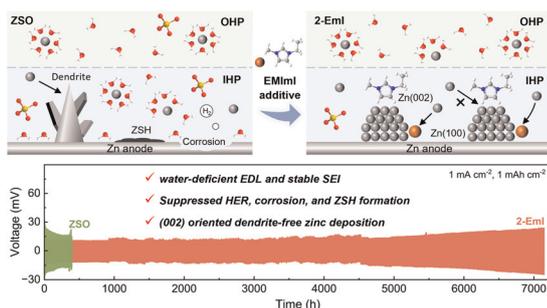
2189



Photothermally induced defect engineering: boosting photothermal synergistic selective catalytic oxidation of benzyl alcohol over *in situ* oxygen vacancy-modulated ultrathin ZnTi-LDH nanosheet

Wen Ma, Tao Li, Jia-Hao Gao, Ren-Tian Zhang, Peng Wang, Qi Chen, Hong-Zi Tan, Jian-Feng Diao, Kai-Qiang Jing,* Zhong-Ning Xu* and Ling Wu*

2202



Interfacial chemistry modulation of Zn anodes via an EMIm ionic liquid additive for stable aqueous zinc-ion batteries

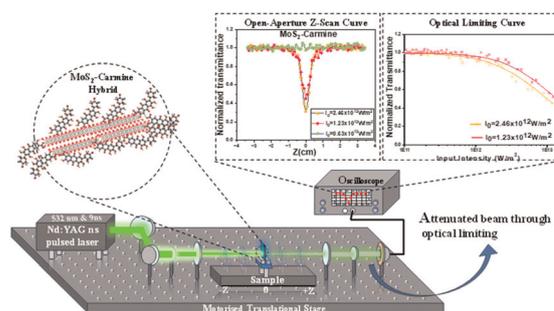
Yulong Wu, Luyao Wen, Shiqiang Wei, Jialin Shi, Quan Zhou, Qian Zhou, Wei Jiang, Xiaojun Wu, Peter Joseph Chintali, Qiang Chi,* Changda Wang* and Li Song*



2215

Fusing organic and inorganic materials: exploring enhanced optical limiting in a carmine–MoS₂ hybrid

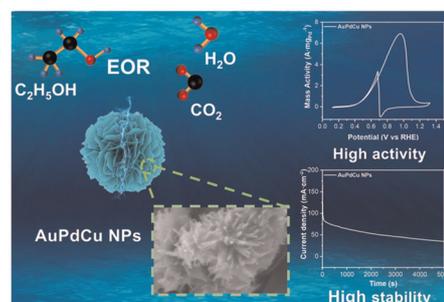
Rukshaana Rafi, Amegha Sahni, Abith M, T. C. Sabari Girisun and Annie Sujatha R*



2228

Fine-tuning and electronic modulation of AuPdCu nanoflowers assembled with nanowires for robust ethanol oxidation reaction performance

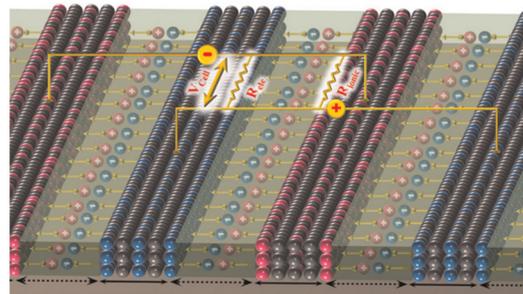
Shengjun Zhang, Jingzhou Liu, Zhaochun Xu, Dongfei Li, Yue Cheng* and Xiaojun Zeng*



2239

Dynamic modulation of ionic and electronic pathways in flexible SnS₂-based interdigitated solid-state supercapacitors

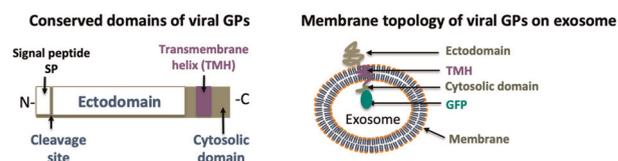
Premkumar Jayaraman, Hamed Pourzolfaghar, Yuan-Yao Li* and Helen Annal Therese*



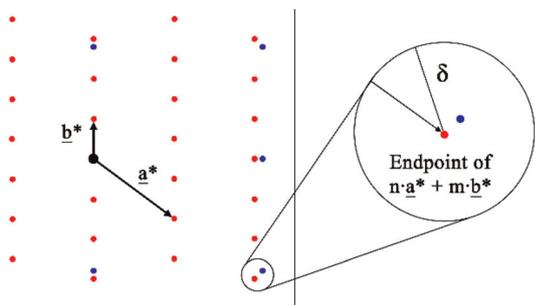
2252

Hijacking exosome biogenesis: viral glycoproteins as modular scaffolds for engineering functionalized extracellular vesicles

Daniel Levy, David Wang, Haseeb Afzali, Mai Anh Do, Jiayi Zhang, Renceh Flojo, Joy Ku, Kyle Asano, David Diebold, Aijun Wang* and Biao Lu*



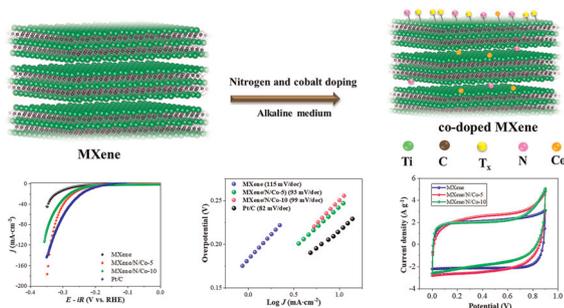
2264



Local deformations quantified with the common sublattice method

János L. Lábár,* Ildikó Cora, Béla Pécz,
Alexander Azarov and Andrej Kuznetsov

2277



Heteroatom (N,Co)-doped MXene with tunable doping for enhanced hydrogen evolution reaction and energy storage

Sunil Kumar,* Sung Ryul Choi, Maksym Stetsenko,
Seojeong Yoo, Manish Taunk, Jun-Young Park,
Syed Muhammad Zain Mehdi* and Yongho Seo*

