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Nanoscale

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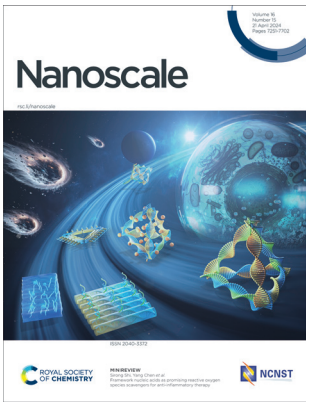
ISSN 2040-3372 CODEN NANOHL 16(15) 7251–7702 (2024)



Cover
See Sirong Shi, Yang Chen *et al.*, pp. 7363–7377.

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Inside cover
See Yuanjing Lin *et al.*, pp. 7264–7286.

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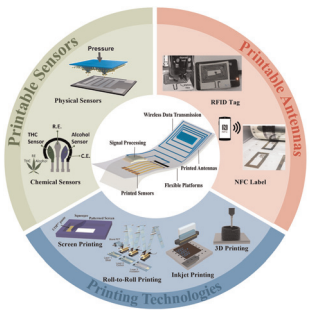
REVIEWS

7264

Printable and flexible integrated sensing systems for wireless healthcare

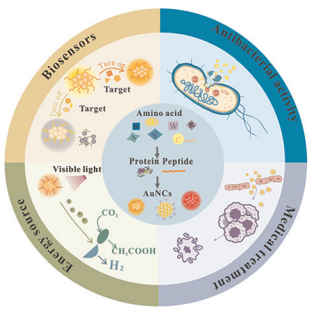
Kemeng Zhou, Ruochen Ding, Xiaohao Ma and Yuanjing Lin*



7287

The roles of templates consisting of amino acids in the synthesis and application of gold nanoclusters

Jinliang Ma,* Mengmeng Yang, Bin Zhang and Mingfu Niu



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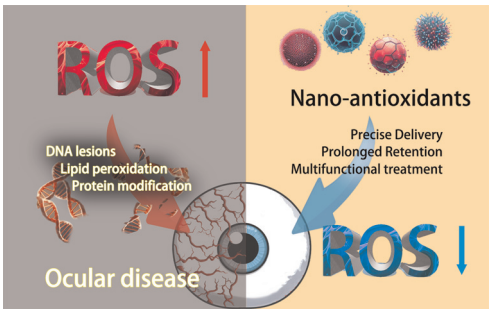
REVIEWS

7307

Revolutionizing eye care: the game-changing applications of nano-antioxidants in ophthalmology

Yuhang Cheng, Shundong Cai, Han Wu, Jintao Pan, Min Su,* Xingyuan Wei, Jinfa Ye, Lang Ke, Gang Liu* and Chengchao Chu*



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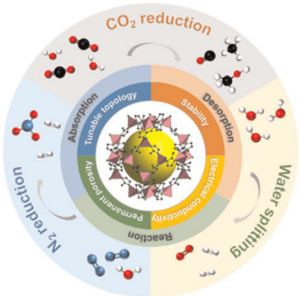
Advances in zeolitic-imidazolate-framework-based catalysts for photo-/electrocatalytic water splitting, CO_2 reduction and N_2 reduction applications

Jiaorong Wang, Lihong Yuan, Pan Zhang, Jing Mao, Jiajie Fan* and Xiao Li Zhang*



7341

Recent advances in functional micro/nanomaterials for removal of crude oil *via* thermal effects

Duanhong Yan, Kai Yin,* Yuchun He, Yao Liu, Lingxiao Wang, Qinwen Deng, Jun He,* Saif Ullah Awan and Ahmed S. G. Khalil

MINIREVIEWS

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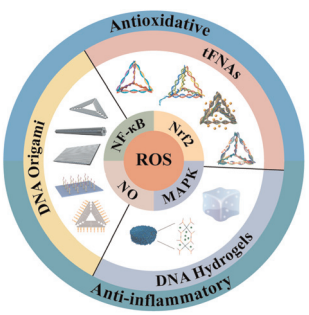
Framework nucleic acids as promising reactive oxygen species scavengers for anti-inflammatory therapy

Yujie Zhu, Ruijianghan Shi, Weitong Lu, Sirong Shi* and Yang Chen*



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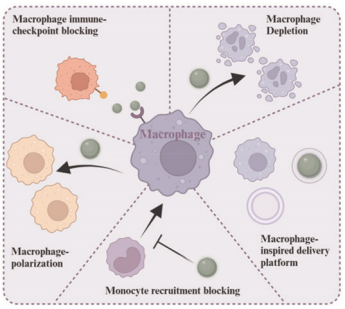

Macrophage-modulating nanomedicine for cancer immunotherapy

Muhammad Muzamil Khan, Yongjiang Li, Zhuoming Zhou, Abigale Ni, Qimanguli Saiding, Duotian Qin, Wei Tao* and Wei Chen*

COMMUNICATION

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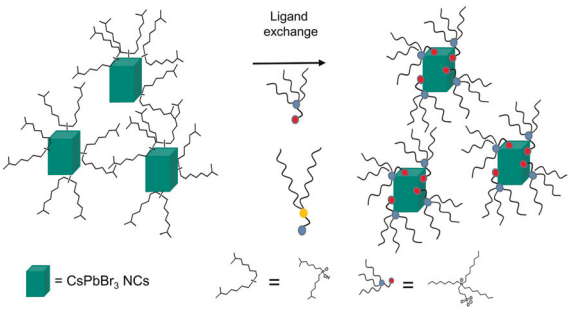

Short-branched alkyl sulfobetaine-passivated $CsPbBr_3$ nanocrystals for efficient green light emitting diodes

Lian-Yue Li, Yong-Hui Song, Jun-Nan Yang, Xue-Chen Ru, Yi-Chen Yin and Hong-Bin Yao*

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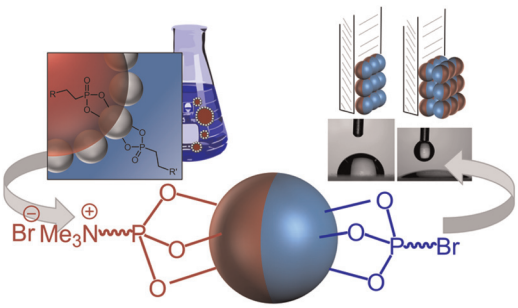
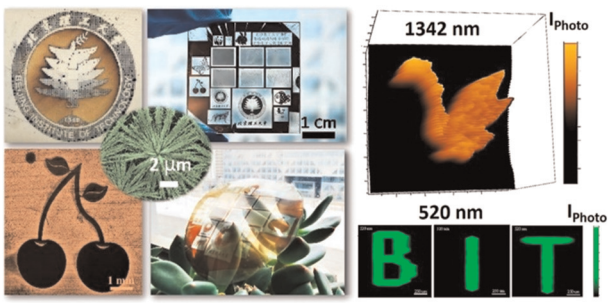


Amphiphilic titania Janus nanoparticles containing ionic groups prepared in oil–water Pickering emulsion

Lucas Niedner and Guido Kickelbick*

7409



Patterned growth of $AgBiS_2$ nanostructures on arbitrary substrates for broadband and eco-friendly optoelectronic sensing

Yu Miao, Zhuoran Wang,* Zhongming Wei and Guozhen Shen*

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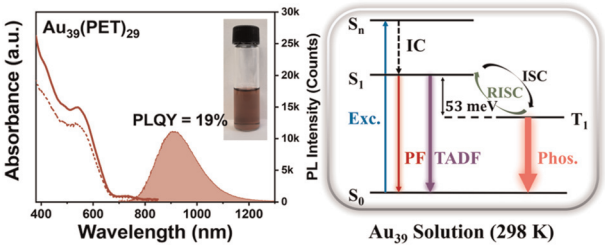
Bright near-infrared emission from the $Au_{39}(SR)_{29}$ nanocluster

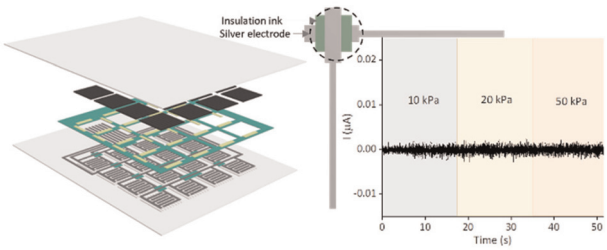
Zhongyu Liu, Lianshun Luo, Jie Kong, Ellen Kahng, Meng Zhou and Rongchao Jin*



7427

Fully printed minimum port flexible interdigital electrode sensor arrays

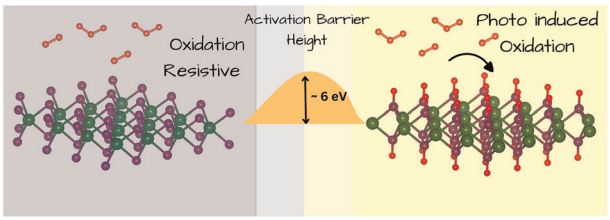
Yanyue Teng, Xin Wang, Zhidong Zhang, Shixuan Mei, Xueli Nan,* Yunlong Zhao, Xikuan Zhang, Chenyang Xue, Libo Gao* and Junyang Li*



7437

First-principles study of the oxidation susceptibility of WS_2, WSe_2, and WTe_2 monolayers

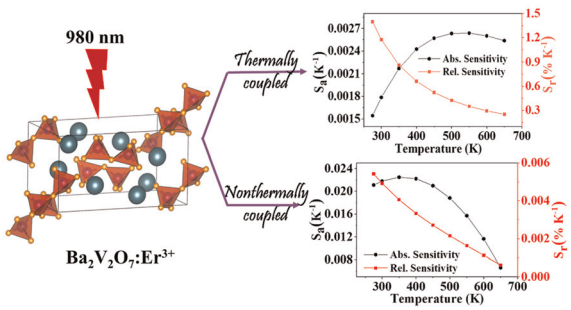
Ashima Rawat,* Lokanath Patra, Ravindra Pandey and Shashi P. Karna*



7443

Er^{3+}-activated $Ba_2V_2O_7$ upconversion nanosheets for dual-mode temperature sensing

Satish Kumar Samal, Sahana Kulkarni, Jyoti Yadav and Boddu S. Naidu*



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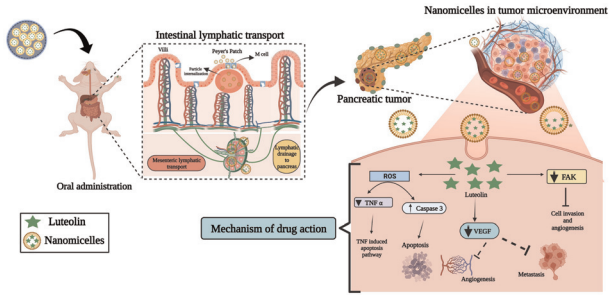

Self-assembled nanomicelles for oral delivery of luteolin utilizing the intestinal lymphatic pathway to target pancreatic cancer

Archana Karole, Yirivinti Hayagreeva Dinakar, Poonam Sagar and Shyam Lal Mudavath*

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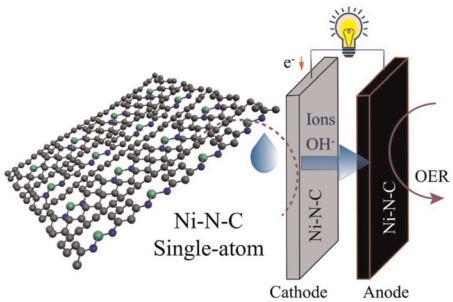
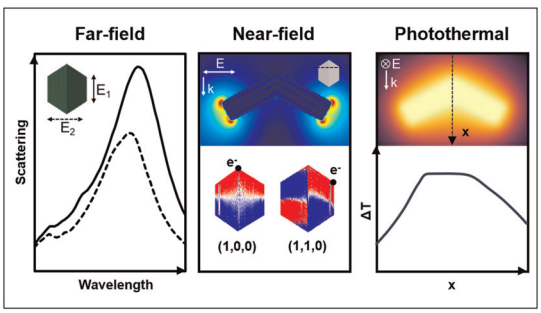


Elevated temperature-driven coordinative reconstruction of an unsaturated single-Ni-atom structure with low valency on a polymer-derived matrix for the electrolytic oxygen evolution reaction

Rahul Patil, Anubha Rajput, Babasaheb M. Matsagar, Norman C. R. Chen, Masaki Ujihara, Rahul R. Salunkhe, Praveen Yadav, Kevin C.-W. Wu, Biswarup Chakraborty* and Saikat Dutta*

7480



Far-field, near-field and photothermal response of plasmonic twinned magnesium nanostructures

Christina Boukouvala, Claire A. West, Andrey Ten, Elizabeth Hopper, Quentin M. Ramasse, John S. Biggins and Emilie Ringe*

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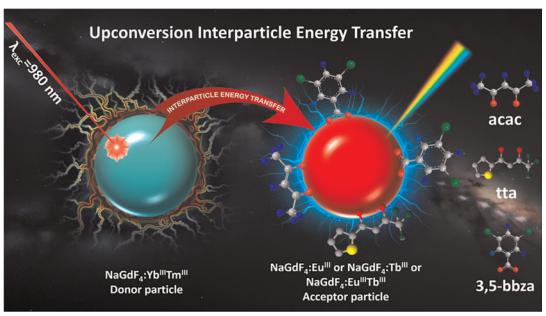

Eu^{III} and Tb^{III} upconversion intermediated by interparticle energy transfer in functionalized $NaLnF_4$ nanoparticles

Sergio Fernando Nunes Coelho, Airton Germano Bispo-Jr, Nagyla Alves de Oliveira, Italo Odone Mazali and Fernando Aparecido Sigoli*

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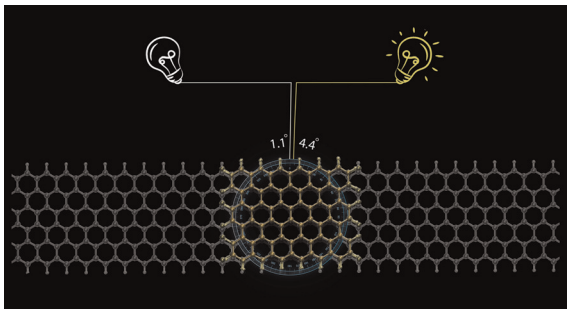
A twist for tunable electronic and thermal transport properties of nanodevices

Azar Ostovan,* Karolina Z. Milowska and Carlos J. García-Cervera*



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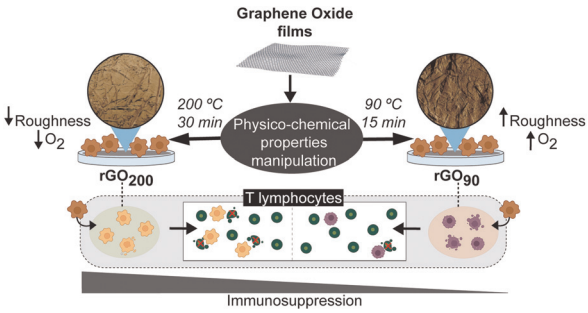
Graphene oxide films as a novel tool for the modulation of myeloid-derived suppressor cell activity in the context of multiple sclerosis

Celia Camacho-Toledano, Isabel Machín-Díaz, Rafael Lebrón-Galán, Ankor González-Mayorga, Francisco J. Palomares, María C. Serrano* and Diego Clemente*



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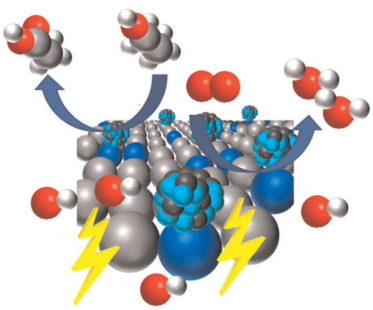
Intermetallic Pd–Y nanoparticles/N-doped carbon nanotubes as multi-active catalysts for oxygen reduction reaction, ethanol oxidation reaction, and zinc–air batteries

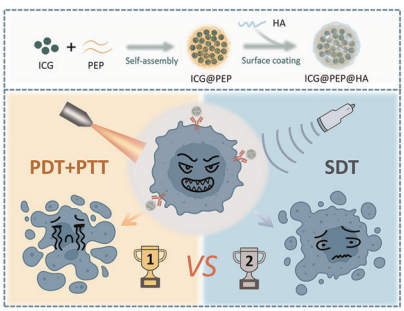
Nipa Roy, Mohammad Shamsuddin Ahmed, Hyo Kyoung Lee and Seungwon Jeon*



7547

External stimuli-triggered photodynamic and sonodynamic therapies in combination with hybrid nanomicelles of ICG@PEP@HA: laser *vs.* ultrasound

Xinru Kong, Yanxi Yang, Xueli Ren, Yandai Lin, Yu Shi and Zhe Liu*



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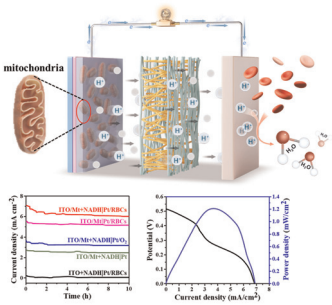

Biological electricity generation system based on mitochondria-nanochannel-red blood cells

Yuting Wang, Huaxiang Chen, Xiaoda Yang, Xungang Diao and Jin Zhai*

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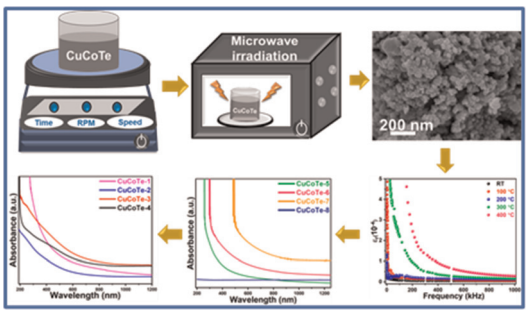

Rapid microwave-assisted synthesis and characterization of a novel CuCoTe nanocomposite material for optoelectronic and dielectric applications

Swikruti Supriya, Subhashree Das, Satish K. Samal, Subrata Senapati* and Ramakanta Naik*

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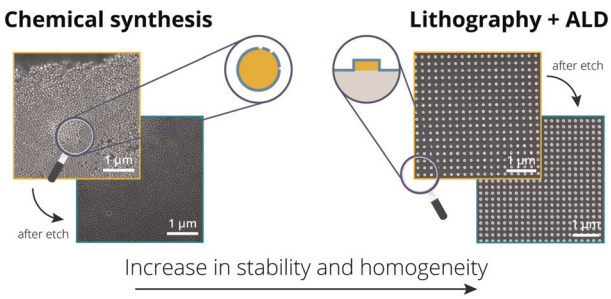
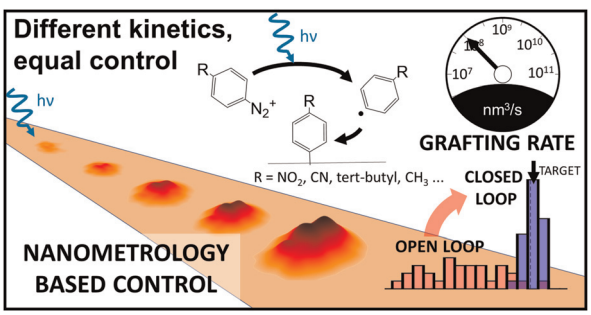


Alternative nano-lithographic tools for shell-isolated nanoparticle enhanced Raman spectroscopy substrates

Ketki Srivastava, Thimo S. Jacobs, Stefan Ostendorp, Dirk Jonker, Floor A. Brzesowsky, Arturo Susarrey-Arce, Han Gardeniers, Gerhard Wilde, Bert M. Weckhuysen, Albert van den Berg, Ward van der Stam* and Mathieu Odijk*

7594



Nanometrology based control: taming radical grafting reactions with attoliter precision

Baptiste Maillot, Jean-Frédéric Audibert, Fabien Miomandre and Vitor Brasiliense*

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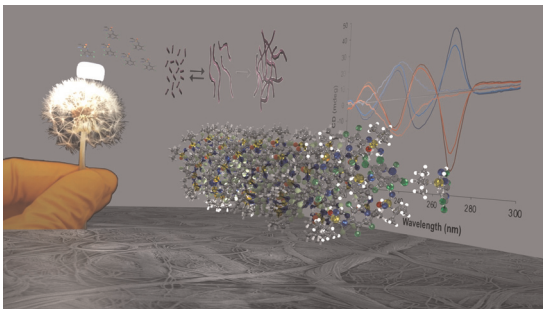
Ultralight aerogels *via* supramolecular polymerization of a new chiral perfluoropyridine-based sulfonimidamide organogelator

Giampiero Proietti, Anton Axelsson, Antonio J. Capezza, Yogesh Todarwal, Julius Kuzmin, Mathieu Linares, Patrick Norman, Zoltán Szabó, Christofer Lendel, Richard T. Olsson and Peter Dinér*



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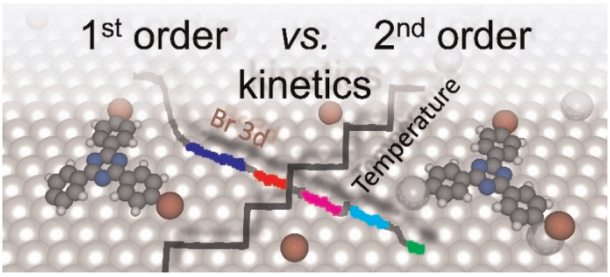
Mechanistic insights into on-surface reactions from isothermal temperature-programmed X-ray photoelectron spectroscopy

Lukas Grossmann, Manuela Hocke, Gianluca Galeotti, Giorgio Contini, Luca Floreano, Albano Cossaro, Amit Ghosh, Michael Schmittel, Johanna Rosen, Wolfgang M. Heckl, Jonas Björk* and Markus Lackinger*



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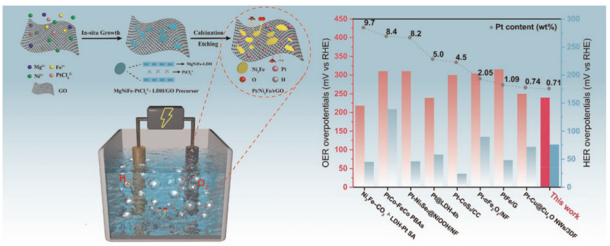
Ultralow-content Pt nanodots/Ni_3Fe nanoparticles: interlayer nanoconfinement synthesis and overall water splitting

Yajun Ni, Wei Zhang, Yaru Li, Shui Hu,* Hong Yan* and Sailong Xu*



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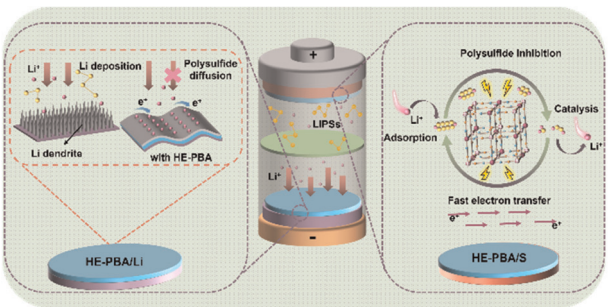
Dual-functional mediators of high-entropy Prussian blue analogues for lithiophilicity and sulfiphilicity in Li–S batteries

Nan Shen, Tianqi Li, Boya Li, Yi Wang, He Liu, Cong Guo, Xiaoyu Chen and Jingfa Li*



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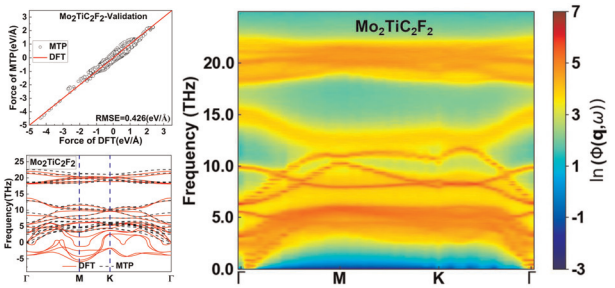

Fast access of the lattice thermal conductivity and phonon quasiparticle spectra of $Mo_2TiC_2T_2$ (T = −O and −F) and Janus Mo_2TiC_2OF MXenes from machine learning potentials

Yiding Qiu, Ziang Jing, Haoliang Liu, Huaxuan He, Kai Wu, Yonghong Cheng and Bing Xiao*

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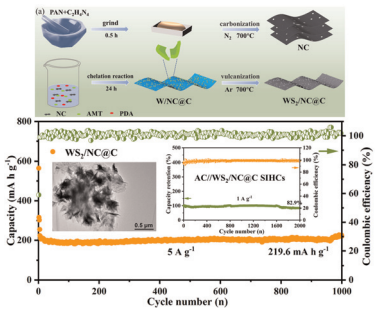

Construction of WS_2/NC@C nanoflake composites as performance-enhanced anodes for sodium-ion batteries

Chun Yuan, Baolin Liu, Hongyu Zhang, Huan Ma, Zhenjiang Lu,* Jing Xie, Jindou Hu and Yali Cao*

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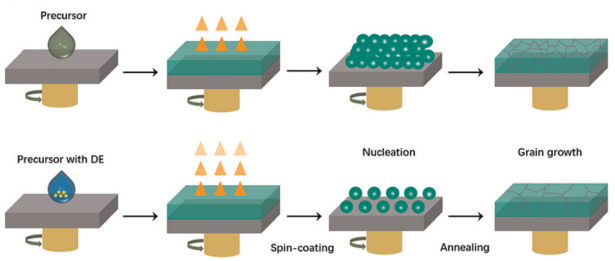
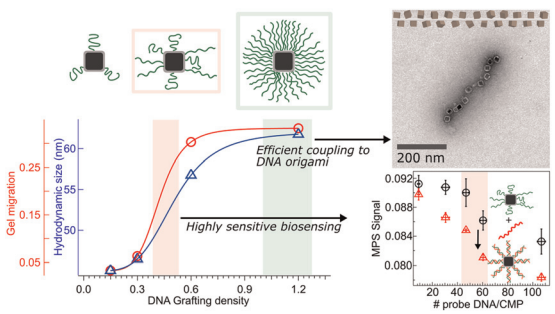


Crystallization control of wide-bandgap perovskites for efficient solar cells *via* adding an anti-solvent into the perovskite precursor

Zhihai Liu, Lei Wang, Xi Liu, Xiaoyin Xie* and Ping Chen*

7678



Cooperative dynamics of DNA-grafted magnetic nanoparticles optimize magnetic biosensing and coupling to DNA origami

Aidin Lak,* Yihao Wang, Pauline J. Kolbeck, Christoph Pauer, Mohammad Suman Chowdhury, Marco Cassani, Frank Ludwig, Thilo Viereck, Florian Selbach, Philip Tinnefeld, Meinhard Schilling, Tim Liedl, Joe Tavacoli and Jan Lipfert

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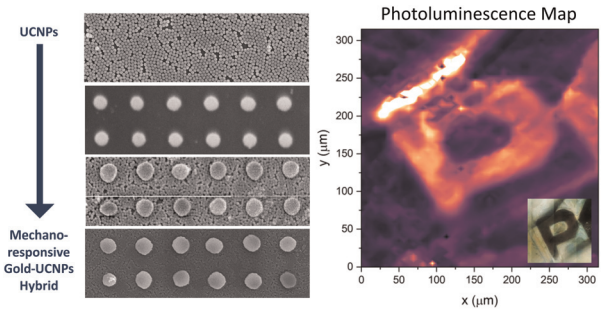
A scalable fabrication method for gold nanodisk-upconverting nanoparticle hybrid nanostructures

Taleb Ba Tis, Cobi Sabo, Bo Xu, Conrad Corbella Bagot, Eric Rappeport and Wounjhang Park*



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