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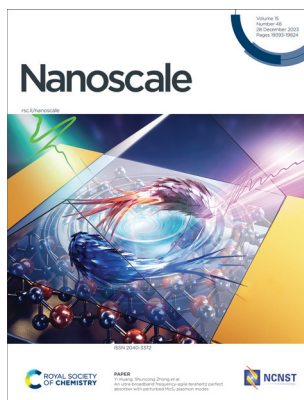
ISSN 2040-3372 CODEN NANOHL 15(48) 19393–19824 (2023)



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See Tao Chen, Zhan Yang *et al.*, pp. 19499–19513.

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### Inside cover

See Yi Huang, Shuncong Zhong *et al.*, pp. 19514–19521.

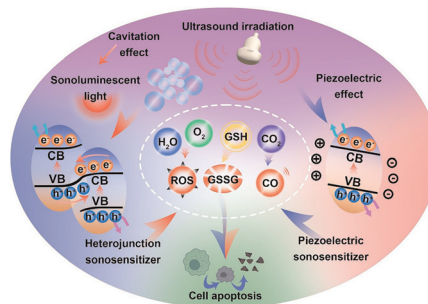
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### Sonocatalytic cancer therapy: theories, advanced catalysts and system design

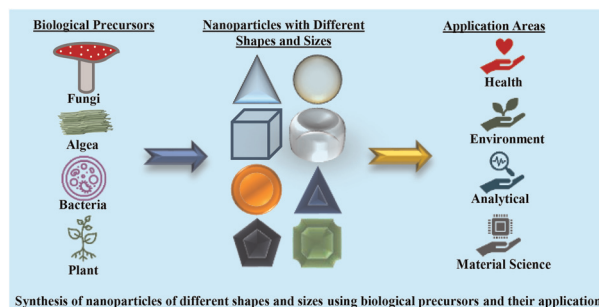
Ruiyan Li, Xuan Wang, Jiacheng Shi, Yong Kang\* and Xiaoyuan Ji\*



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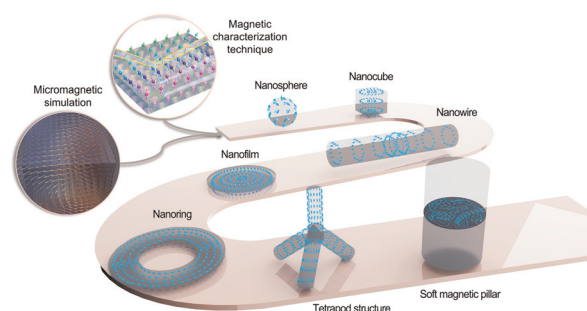


## MINIREVIEW

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# Magnetic characterization techniques and micromagnetic simulations of magnetic nanostructures: from zero to three dimensions

Xin Li, Zhaolian Wang, Zhongyun Lei, Wei Ding, Xiao Shi, Jujian Yan and Jiangang Ku\*

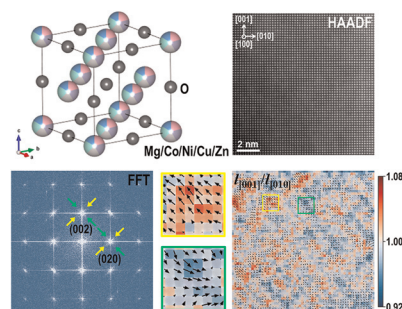


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# Sub-Ångstrom-scale structural variations in high-entropy oxides

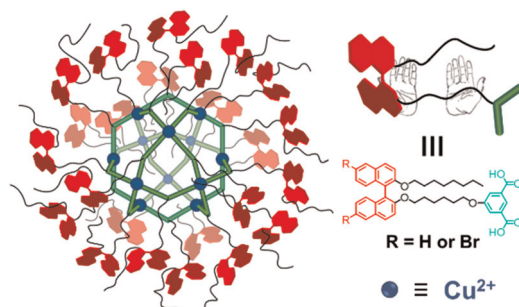
Hanbin Gao, Ning Guo, Yue Gong, Lu Bai, Dongwei Wang and Qiang Zheng\*



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# Chiral metal–organic cages decorated with binaphthalene moieties

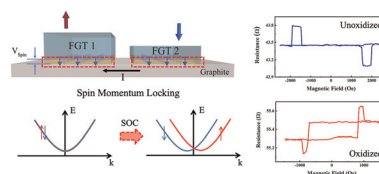
Cheng Huang, Jiajia Li, Xinyuan Zhu and Youfu Wang\*



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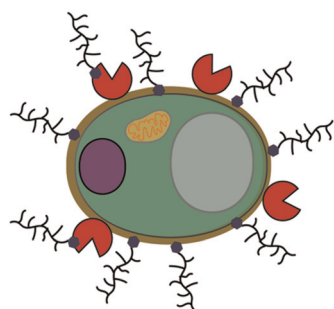
# Tunable asymmetric magnetoresistance in an Fe<sub>3</sub>GeTe<sub>2</sub>/graphite/Fe<sub>3</sub>GeTe<sub>2</sub> lateral spin valve

Xiangyu Zeng, Ge Ye, Fazhi Yang, Qikai Ye, Liang Zhang, Boyang Ma, Yulu Liu, Mengwei Xie, Yan Liu,\* Xiaozhi Wang,\* Yue Hao and Genquan Han



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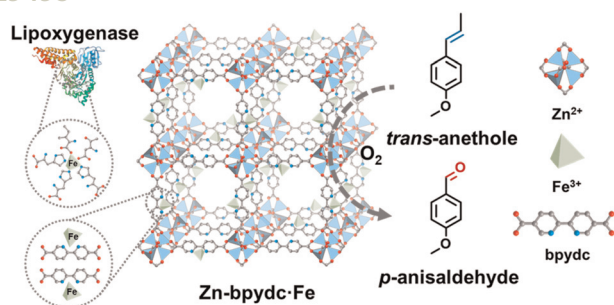
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### Self-decorating cells via surface-initiated enzymatic controlled radical polymerization

Andrea Belluati,\* Dominic Happel, Malte Erbe, Nicole Kirchner, Anna Szelwicka, Adrian Bloch, Valeria Berner, Andreas Christmann, Brigitte Hertel, Raheleh Pardehkhorrarn, Amin Reyhani, Harald Kolmar and Nico Bruns\*

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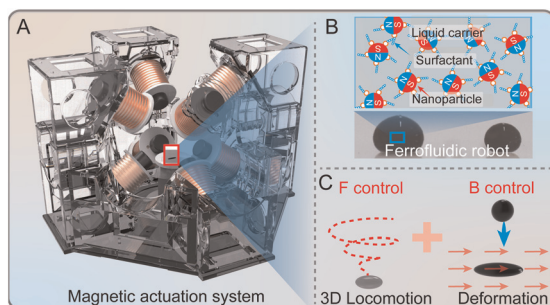


### Iron-incorporated metal–organic frameworks for oxidative cleavage of *trans*-anethole to *p*-anisaldehyde

Jun Xiong, Xin Yuan, Min-Hua Zong, Xiaoling Wu\* and Wen-Yong Lou\*

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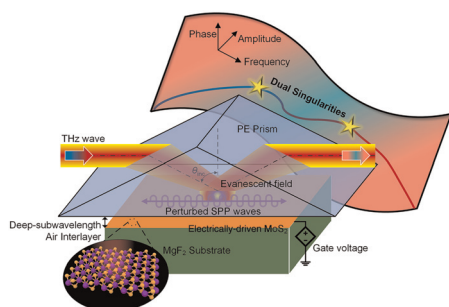
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### Combined three dimensional locomotion and deformation of functional ferrofluidic robots

Xinjian Fan, Yunfei Zhang, Zhengnan Wu, Hui Xie, Lining Sun, Tao Chen\* and Zhan Yang\*

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### An ultra-broadband frequency-agile terahertz perfect absorber with perturbed MoS<sub>2</sub> plasmon modes

Yujie Zhong, Yi Huang,\* Shuncong Zhong,\* Tingting Shi, Fuwei Sun, Tingling Lin, Qiuming Zeng, Ligang Yao and Xuefeng Chen



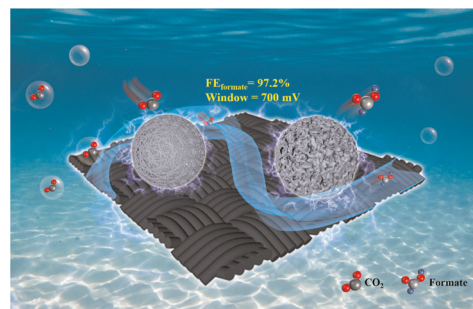


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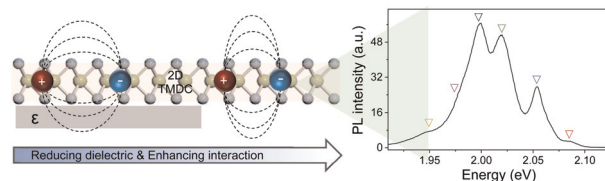
Leliang Cao, Jie Huang, Xueying Wu, Ben Ma, Qingqing Xu, Yuanhong Zhong,\* Ying Wu,\* Ming Sun and Lin Yu\*



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### Enhanced interactions of excitonic complexes in free-standing WS<sub>2</sub>

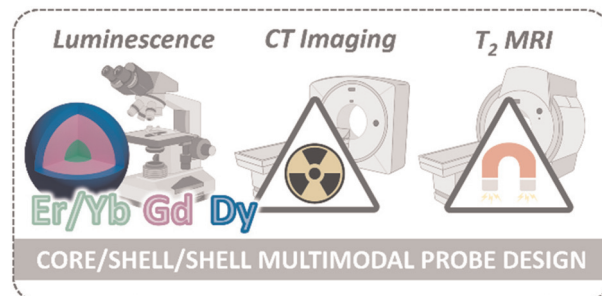
Xueqian Sun, Zhuoyuan Lu and Yuerui Lu\*



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### Core–multi-shell design: unlocking multimodal capabilities in lanthanide-based nanoparticles as upconverting, T<sub>2</sub>-weighted MRI and CT probes

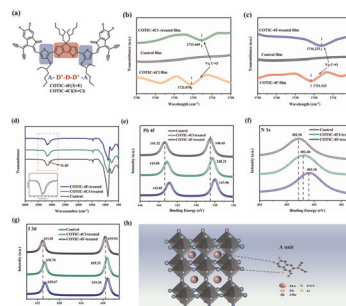
Nan Liu, Christian Homann, Samuel Morfin, Meghana S. Kesanakurti, Nicholas D. Calvert, Adam J. Shuhendler, Tom Al and Eva Hemmer\*



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### Stable and efficient perovskite solar cells via hydrogen bonding and coordination

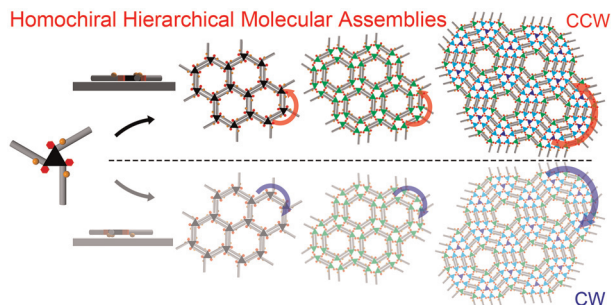
Tianrui Li, Tao Zhu,\* Xiyao Zhang, Haorui Tang, Kai Zhang, Xing Zhu, Shaoyuan Li, Wenhui Ma and Jie Yu\*



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## Homochiral Hierarchical Molecular Assemblies



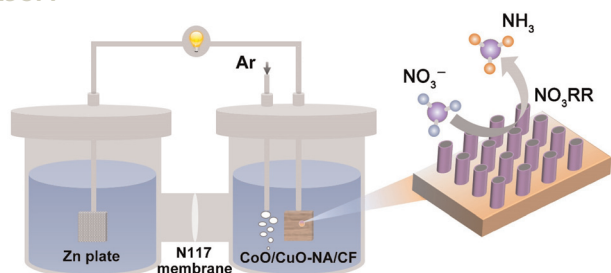
## Homochiral hierarchical molecular assemblies through dynamic combination of conformational states of a single chiral building block at the liquid/solid interface

Matsuhiro Maeda, Kazuya Sato, Steven De Feyter and Kazukuni Tahara\*

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## Electrocatalytic nitrate-to-ammonia conversion on CoO/CuO nanoarrays using Zn–nitrate batteries

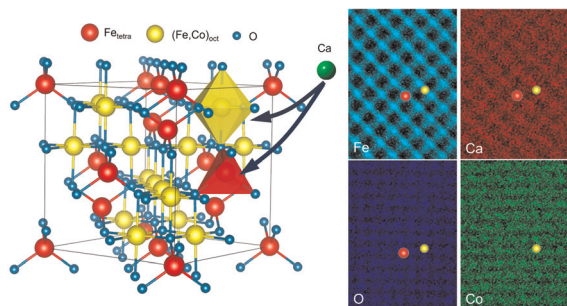
Shanshan Chen, Gaocan Qi,\* Ruilian Yin, Qian Liu, Ligang Feng, Xincan Feng, Guangzhi Hu, Jun Luo, Xijun Liu\* and Wenxian Liu\*



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## Atomic-scale observation of calcium occupation in spinel cobalt ferrite towards the regulation of intrinsic magnetic properties

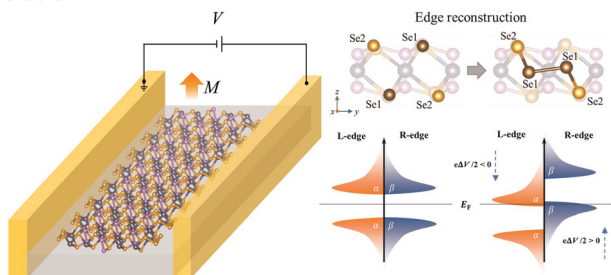
Guohua Bai, Weijia Zhong, Zhenhua Zhang,\* Sateesh Bandaru, Xiuyuan Fan, Xiaolian Liu and Xuefeng Zhang\*



19598

Electrically induced net magnetization in FePSe<sub>3</sub> nanoribbons: the role of edge reconstructions

Wenqi Zhang, Weifeng Xie, Bin Shao\* and Xu Zuo\*

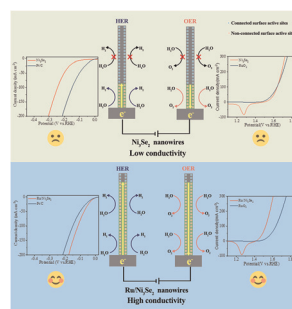


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### Exceptional green hydrogen production performance of a ruthenium-modulated nickel selenide

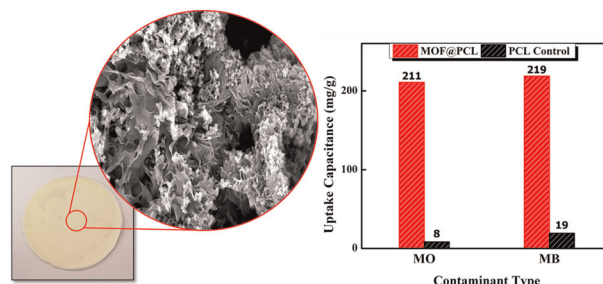
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Muhammad Humayun, Junhong Duan, Xuefei Xu,  
Yanjuan Fu, Mohamed Bououdina and Chundong Wang\*



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### Durable and recyclable MOF@polycaprolactone mixed-matrix membranes with hierarchical porosity for wastewater treatment

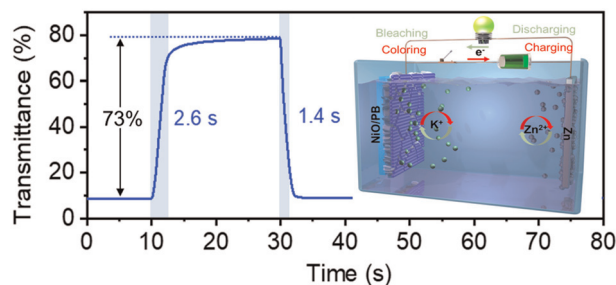
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Youssef Safwat and Mohamed H. Alkordi



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### Transparent metal oxide interlayer enabling durable and fast-switching zinc anode-based electrochromic devices

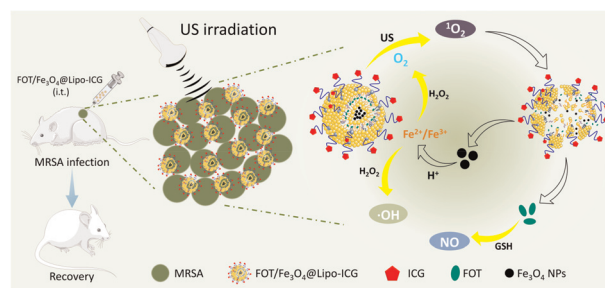
Bing Xu, Jingwei Chen,\* Ping Li, Yujia Ouyang, Yu Ma,  
Huanlei Wang\* and Haizeng Li\*



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### An ultrasound-controllable ROS-responsive nanoplatform for O<sub>2</sub> and NO generation to enhance sonodynamic therapy against multidrug-resistant bacterial infections

Jingyi Zhang, Lin Zhang, Yuhang Zhang, Rong Ju and  
Guoqing Wei\*



## PAPERS

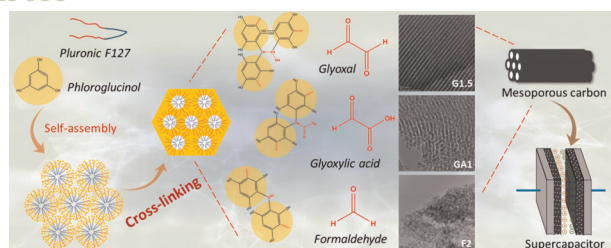
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### Nano-infrared analysis of amyloid $\beta_{1-42}$ fibrils formed in the presence of lipids with unsaturated fatty acids

Kirył Zhaliaska and Dmitry Kurouski\*

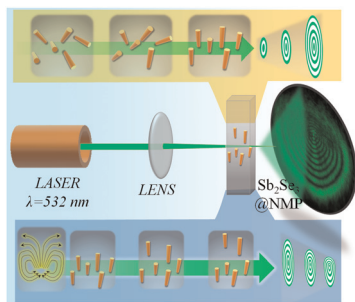
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### Advancing mesoporous carbon synthesis for supercapacitors: a systematic investigation of cross-linking agent effects on pore structure and functionality

Yaoguang Song, Xiaolei Zhang,\* Peter A. A. Klusener and Peter Nockemann\*

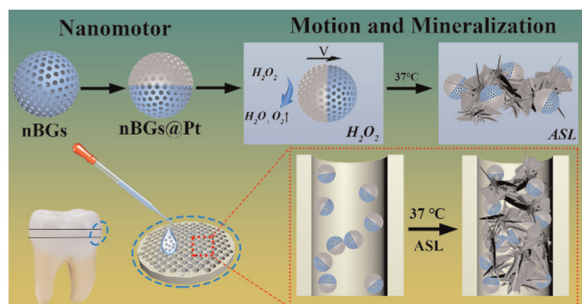
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### Strong non-linear optical response of $\text{Sb}_2\text{Se}_3$ nanorods in a liquid suspension based on spatial self-phase modulation and their all-optical photonic device applications

Nabanita Sen, Nabamita Chakraborty, Biswajit Das and Kalyan Kumar Chattopadhyay\*

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### Self-propelled bioglass janus nanomotors for dentin hypersensitivity treatment

Wei Wu, Hang Chi, Qianyang Zhang, Ce Zheng, Narisu Hu,\* Yingjie Wu\* and Jiaxin Liu\*



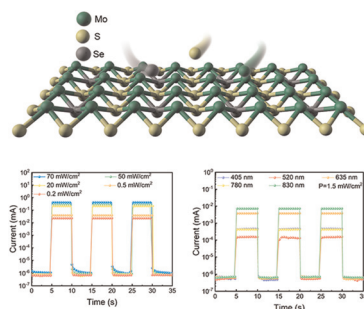


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### An ultrafast and self-powered $\text{MoS}_x\text{Se}_{2-x}/\text{Si}$ photodetector with high light-trapping structures and a $\text{SiO}_x$ interface layer

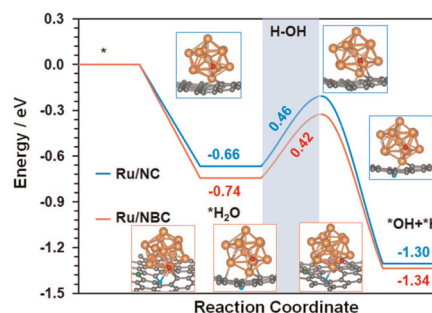
Zhen Yue, Honglie Shen,\* Chen Wang, Yajun Xu, Jinjie Zheng, Yufang Li, Jingzhe Zhang, Jianian Chen, Hang Bai, Hechao Li, Jiuchuan Zeng and Long Wang



19703

### Ru nanoclusters anchored on boron- and nitrogen-doped carbon for a highly efficient hydrogen evolution reaction in alkaline seawater

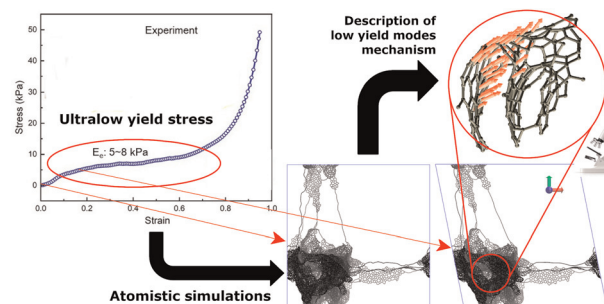
Binbin Jiang, Zhen Wang, Hui Zhao, Xie Wang, Xiaoxia Mao, Aijian Huang,\* Xuehua Zhou, Kui Yin,\* Kefa Sheng and Junwei Wang\*



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### Atomistic mechanisms underlying plastic flow at ultralow yield stress in ductile carbon aerogels

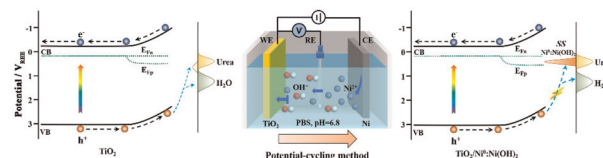
Giorgio Conter, Kailu Xiao, Xianqian Wu, William A. Goddard, III\* and Alessandro Fortunelli\*



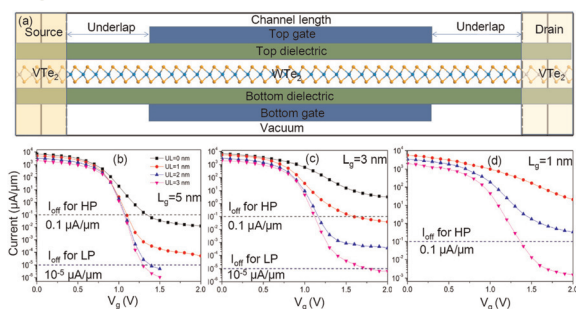
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### Tailoring the density of states of $\text{Ni}(\text{OH})_2$ with $\text{Ni}^0$ towards solar urea wastewater splitting

Li Zou, Wenyan Tao, Jing Huang, Shuxiang Wang, Yijia Zhang, Keqiang Han, Yi Hu, Haoyan Gao, Pingping Yang and Jiale Xie\*



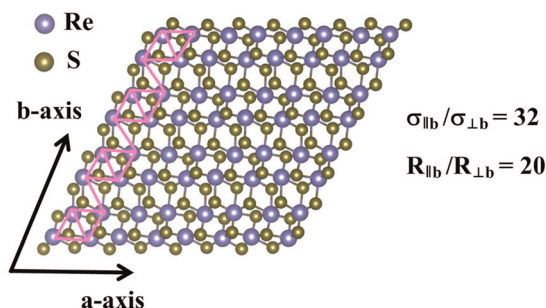
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### The device performance limit of in-plane monolayer VTe<sub>2</sub>/WTe<sub>2</sub> heterojunction-based field-effect transistors

Xingyi Tan, Qiang Li, Dahua Ren and Hua-Hua Fu\*

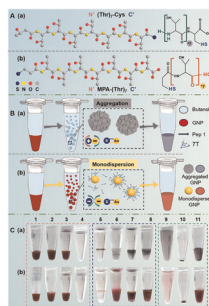
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### Electrical and optoelectronic anisotropy and surface electron accumulation in ReS<sub>2</sub> nanostructures

Hemant Kumar Bangolla, Muhammad Yusuf Fakhri, Ching-Hsuan Lin, Cheng-Maw Cheng, Yi-Hung Lu, Tsu-Yi Fu, Pushpa Selvarasu, Rajesh Kumar Ulaganathan, Raman Sankar and Ruei-San Chen\*

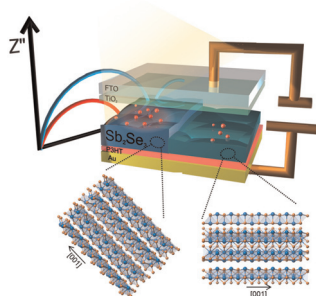
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### Quantified instant conjugation of peptides on a nanogold surface for tunable ice recrystallization inhibition

Shixuan Yang, Zhongxiang Ding, Leiming Chu, Mengke Su and Honglin Liu\*

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### Impedance spectroscopy of Sb<sub>2</sub>Se<sub>3</sub> photovoltaics consisting of (Sb<sub>4</sub>Se<sub>6</sub>)<sub>n</sub> nanoribbons under light illumination

Jaemin Park, Thomas P. Shalvey, Thomas Moehl, Kyoohee Woo, Jonathan D. Major, S. David Tilley and Wooseok Yang\*

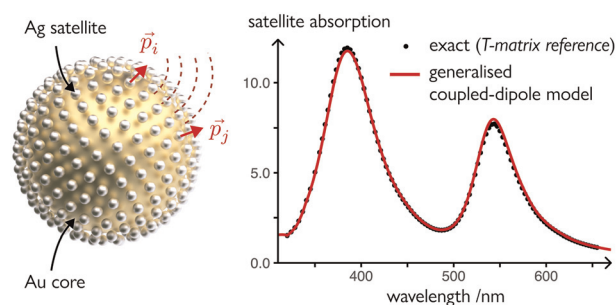


## PAPERS

19767

**Generalised coupled-dipole model for core-satellite nanostructures**

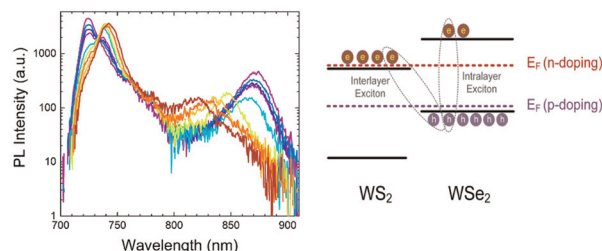
Stefania Glukhova, Eric C. Le Ru and Baptiste Auguie\*



19777

**Probing the interlayer excitation dynamics in WS<sub>2</sub>/WSe<sub>2</sub> heterostructures with broadly tunable pump and probe energies**

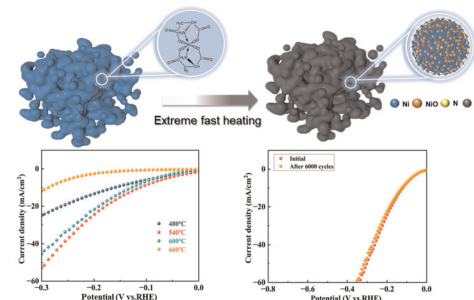
Anran Wang, Wendian Yao, Zidi Yang, Dingqi Zheng, Songlin Li, Yi Shi, Dehui Li and Fengqiu Wang\*



19784

**Ni/NiO@NC as a highly efficient and durable HER electrocatalyst derived from nickel(II) complexes: importance of polydentate amino-acid ligands**

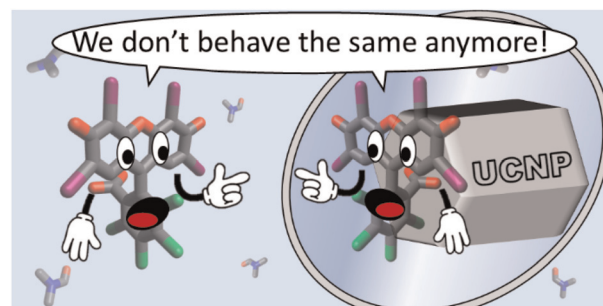
Xu Yang, Mengxue Liu, Fang Cui,\* Qinghai Ma and Tieyu Cui\*



19792

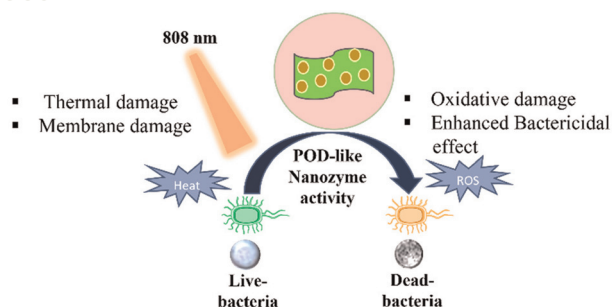
**Synergistic or antagonistic effect of lanthanides on Rose Bengal photophysics in upconversion nanohybrids?**

Juan Ferrera-González, María González-Béjar\* and Julia Pérez-Prieto\*



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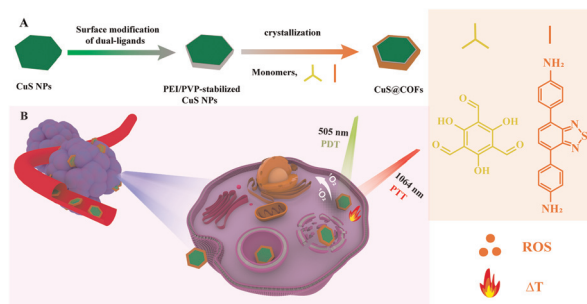
19801



### 2D-MoS<sub>2</sub>-supported copper peroxide nanodots with enhanced nanozyme activity: application in antibacterial activity

Archana Kumari, Jagabandhu Sahoo and Mrinmoy De\*

19815



### Dual-wavelength responsive CuS@COF nanosheets for high-performance photothermal/photodynamic combination treatments

Qian An, Shengze Su, Wei Hu, Yanying Wang, Tao Liang,\* Xianghong Li\* and Chunya Li\*

## CORRECTIONS

19820

### Correction: Pursuing colloidal diamonds

Łukasz Baran,\* Dariusz Tarasewicz, Daniel M. Kamiński and Wojciech Rżysko

19821

### Correction: MXenes vs. clays: emerging and traditional 2D layered nanoarchitectonics

Eduardo Ruiz-Hitzky\* and Cristina Ruiz-Garcia

