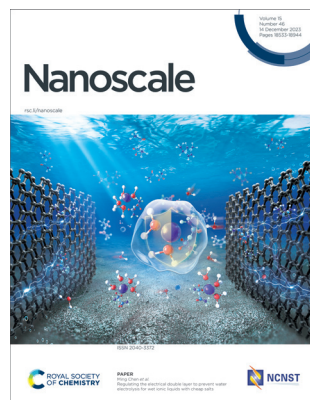


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ISSN 2040-3372 CODEN NANOHL 15(46) 18533–18944 (2023)



### Cover

See Ming Chen *et al.*,  
pp. 18603–18612.

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## EDITORIAL

18547

### Editor's Choice collection: photon upconversion

Xiaogang Liu

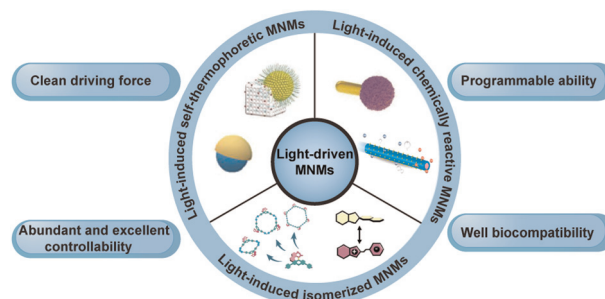


## REVIEW

18550

### Light-driven micro/nanomotors in biomedical applications

Xuejiao Zeng, Mingzhu Yang, Hua Liu,  
Zhenzhong Zhang, Yurong Hu,\* Jinjin Shi\* and  
Zhi-Hao Wang\*



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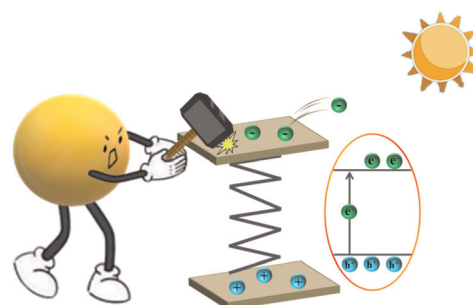


## MINIREVIEW

18571

### Review of Bi-based catalysts in piezocatalytic, photocatalytic and piezo-photocatalytic degradation of organic pollutants

Ying Cheng, Yubo Zhang, Zhaobo Wang, Rui Guo,\* Junhua You and Hangzhou Zhang\*

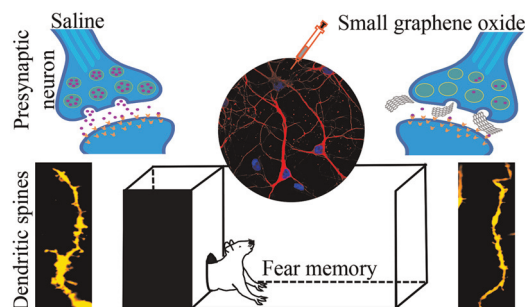


## COMMUNICATIONS

18581

### Delivery of graphene oxide nanosheets modulates glutamate release and normalizes amygdala synaptic plasticity to improve anxiety-related behavior

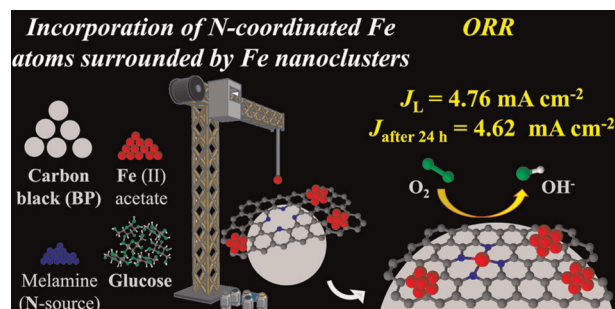
Elisa Pati, Audrey Franceschi Biagioni, Raffaele Casani, Neus Lozano, Kostas Kostarelos, Giada Cellot\* and Laura Ballerini\*



18592

### Converting carbon black into an efficient and multi-site ORR electrocatalyst: the importance of bottom-up construction parameters

Rui S. Ribeiro,\* Marc Florent, Juan J. Delgado, M. Fernando R. Pereira and Teresa J. Bandosz\*

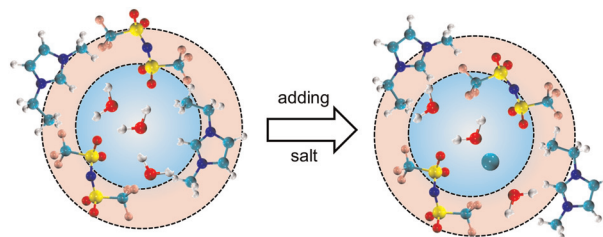


## PAPERS

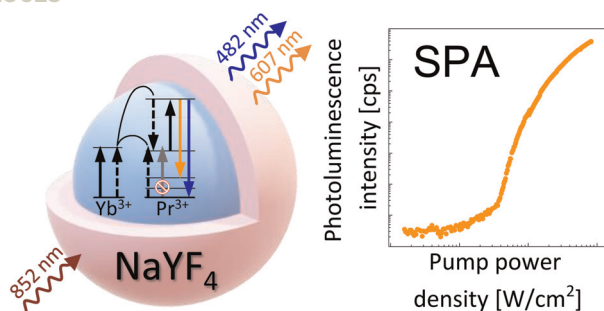
18603

### Regulating the electrical double layer to prevent water electrolysis for wet ionic liquids with cheap salts

Jiedu Wu, Jinkai Zhang, Ming Chen,\* Jiawei Yan, Bingwei Mao and Guang Feng



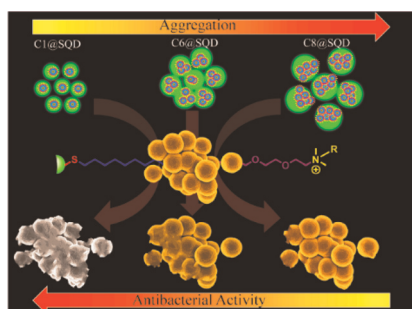
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### Understanding Yb<sup>3+</sup>-sensitized photon avalanche in Pr<sup>3+</sup> co-doped nanocrystals: modelling and optimization

Magdalena Dudek,\* Zuzanna Korczak, Katarzyna Prorok, Oleksii Bezukrovnyi, Lining Sun, Marcin Szalkowski and Artur Bednarkiewicz\*

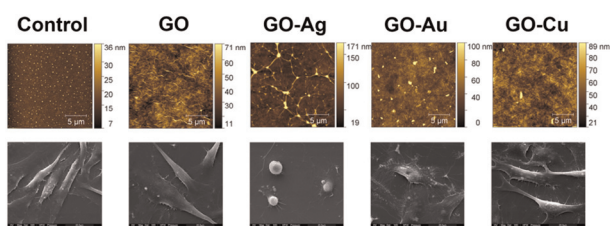
18624



### Post-functionalization of sulfur quantum dots and their aggregation-dependent antibacterial activity

Avijit Mondal, Subrata Pandit, Jagabandhu Sahoo, Yogeswari Subramaniam and Mrinmoy De\*

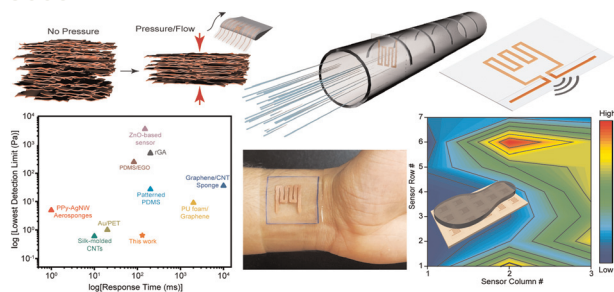
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### Nanostructured graphene oxide enriched with metallic nanoparticles as a biointerface to enhance cell adhesion through mechanosensory modifications

Michał Pruchniewski, Ewa Sawosz, Malwina Sosnowska-Ławnicka, Agnieszka Ostrowska, Maciej Łojkowski, Piotr Koczoń, Paweł Nakielski, Marta Kutwin, Sławomir Jaworski and Barbara Strojny-Cieślak\*

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### Printing conformal and flexible copper networks for multimodal pressure and flow sensing

Saurabh Khuje, Abdullah Islam, Jian Yu\* and Shenqiang Ren\*

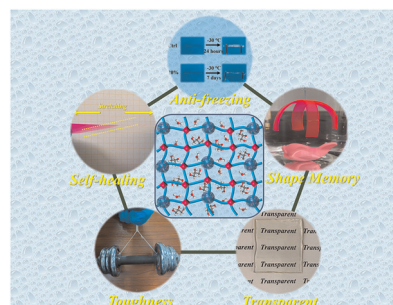


## PAPERS

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### Nanoarchitectonics composite hydrogels with high toughness, mechanical strength, and self-healing capability for electrical actuators with programmable shape memory properties

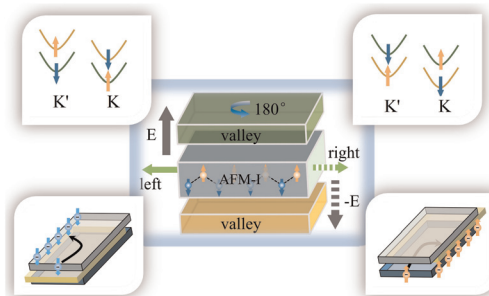
Yanqing Wang, Pengcheng Li, Shuting Cao, Yuetao Liu and Chuanhui Gao\*



18678

### Valley manipulation by sliding-induced tuning of the magnetic proximity effect in heterostructures

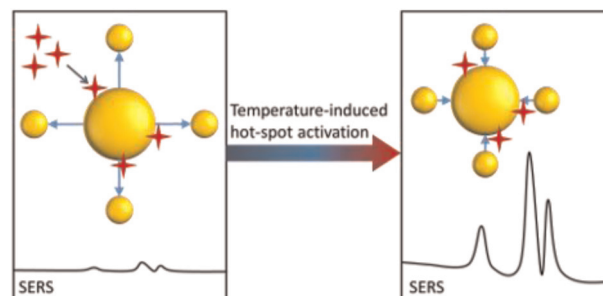
Xikui Ma, Yingcai Fan, Weifeng Li, Yangyang Li, Xiangdong Liu, Xian Zhao\* and Mingwen Zhao\*



18687

### Turning on hotspots: supracolloidal SERS probes made brilliant by an external activation mechanism

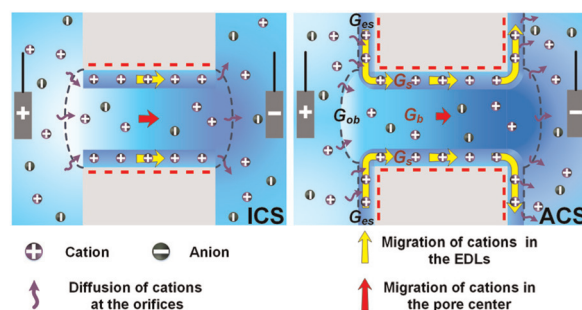
Sophie Jancke, Chen Liu, Ruosong Wang, Swagato Sarkar, Quinn A. Besford, Tobias A. F. König, Jürgen Popp, Dana Cialla-May and Christian Rossner\*



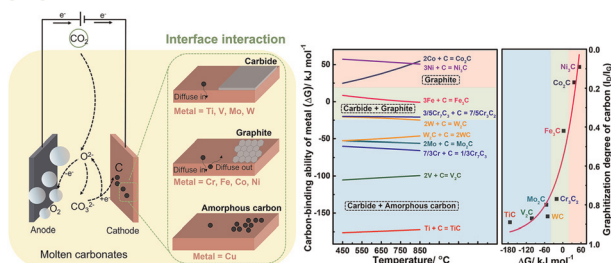
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### Modulation mechanism of ionic transport through short nanopores by charged exterior surfaces

Long Ma, Zhe Liu, Jia Man, Jianyong Li, Zuzanna S. Siwy and Yinghua Qiu\*



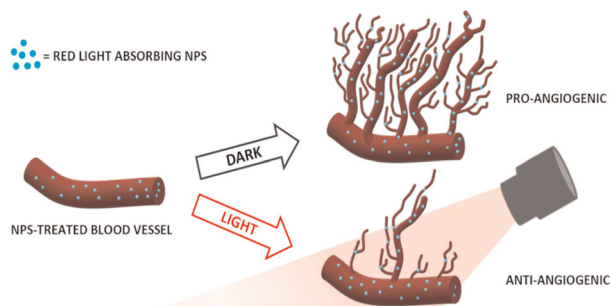
18707



## Unraveling the role of substrate materials in governing the carbon/carbide growth of molten carbonate electrolysis of CO<sub>2</sub>

Rui Yu, Kaifa Du,\* Bowen Deng, Huayi Yin and Dihua Wang\*

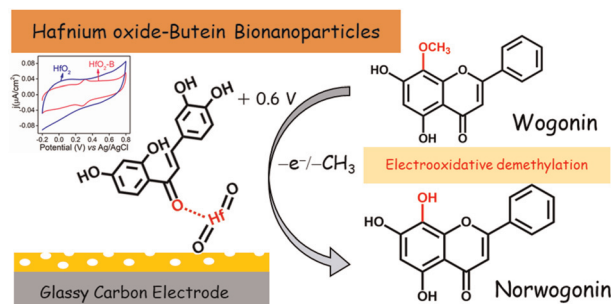
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## Bimodal modulation of *in vitro* angiogenesis with photoactive polymer nanoparticles

Gabriele Tullii,\* Edgar Gutierrez-Fernandez, Carlotta Ronchi, Christian Bellacanzone, Luca Bondi, Miryam Criado-Gonzalez, Paola Lagonegro, Francesco Moccia, Tobias Cramer, David Mecerreyes, Jaime Martín and Maria Rosa Antognazza\*

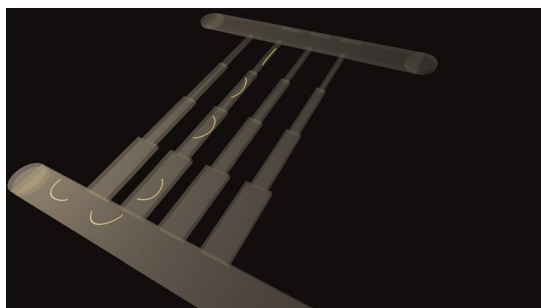
18727



## Buteinylated-hafnium oxide bionanoparticles for electrochemical sensing of wogonin

Vinoth Krishnan, Moghitha Parandhaman, Ramya Kanagaraj and Murugan Veerapandian\*

18737



## Probing physical properties of single amyloid fibrils using nanofluidic channels

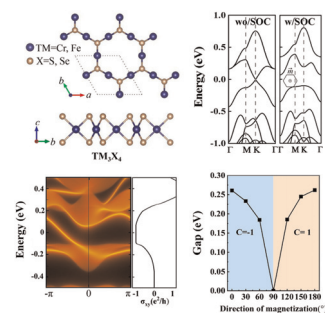
Nima Sasanian, Rajhans Sharma, Quentin Lubart, Sriram KK, Marziyeh Ghaeidamini, Kevin D. Dorfman, Elin K. Esbjörner\* and Fredrik Westerlund\*



18745

## Insight into the quantum anomalous Hall states in two-dimensional kagome $\text{Cr}_3\text{Se}_4$ and $\text{Fe}_3\text{S}_4$ monolayers

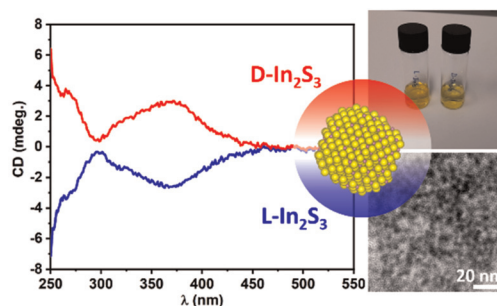
Huijie Lian, Xiaokang Xu, Ying Han, Jie Li, Wenqi Zhou, Xiaojing Yao,\* Jinlian Lu\* and Xiuyun Zhang\*



18753

## Ligand induced chirality in $\text{In}_2\text{S}_3$ nanoparticles

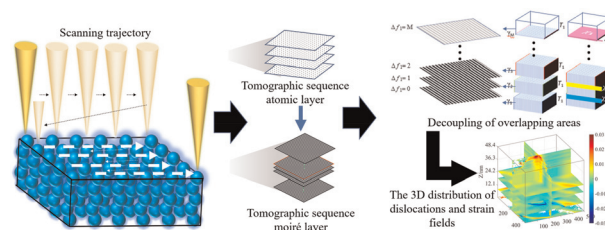
Lorenzo Branzi,\* Oriane Lavet and Yurii K. Gun'ko\*



18762

## A STEM tomographic multiplication nano-moiré method

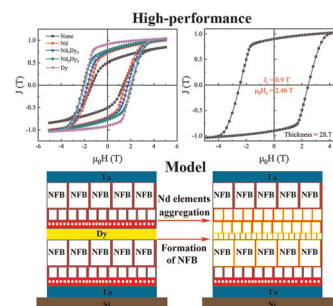
Yao Zhao, Huihui Wen, Yang Yang, Jie Dong, Wei Feng, Hongye Zhang, Zhanwei Liu\* and Chao Liu\*



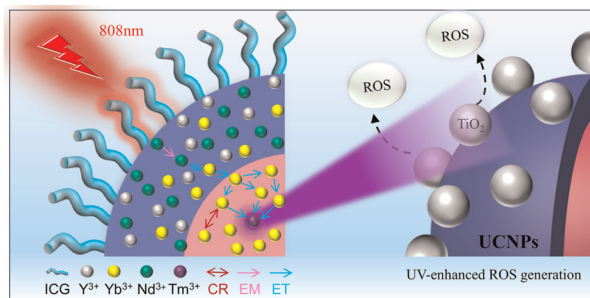
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## Simultaneous enhancement of coercivity and saturation magnetization in high-performance anisotropic NdFeB thick films with a Dy diffusion layer

Zhixing Ye, Xiaotian Zhao,\* Long Liu, Wei Liu,\* Jinghui Wang, JinXiang Wu, Yang Li, Jun Ma, Hongzhan Ju and Zhidong Zhang



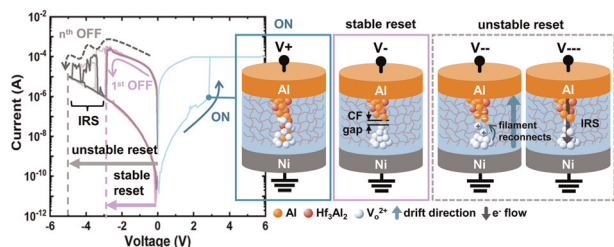
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### Near-infrared light responsive intensified multiphoton ultraviolet upconversion in nanostructures towards efficient reactive oxygen species generation

Shan Yang, Songbin Liu,\* Yuxuan Qiu, Yu Liao, Ze Zhang, Di Wu and Xinyu Ye\*

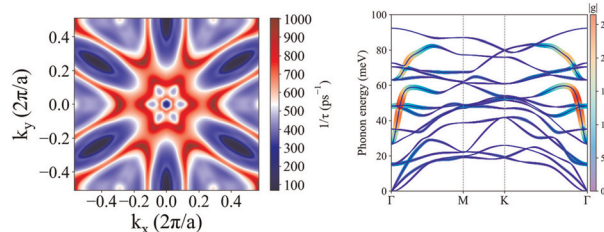
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### A non-invasive approach to the resistive switching physical model of ultra-thin organic–inorganic dielectric-based ReRAMs

Alba Martinez, Byung Jin Cho\* and Min Ju Kim\*

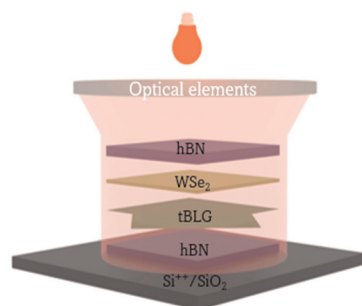
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### The carrier mobility and superconducting properties of monolayer oxygen-terminated functionalized MXene Ti<sub>2</sub>CO<sub>2</sub>

Reza Shayanfar, Mohammad Alidoosti, Davoud Nasr Esfahani and Mahdi Pourfath\*

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### Band structure sensitive photoresponse in twisted bilayer graphene proximitized with WSe<sub>2</sub>

Aparna Parappurath,\* Bhaskar Ghawri, Saisab Bhowmik, Arup Singha, K. Watanabe, T. Taniguchi and Arindam Ghosh

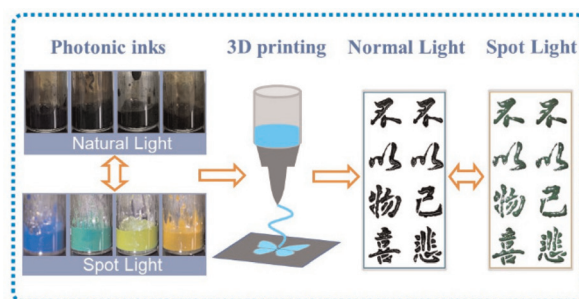


## PAPERS

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**3D printing of non-iridescent structural color inks for optical anti-counterfeiting**

Qilin Guo, Xiuli Wang, Jia Guo and Changchun Wang\*



18832

**Cool carriers: triplet diffusion dominates upconversion yield**

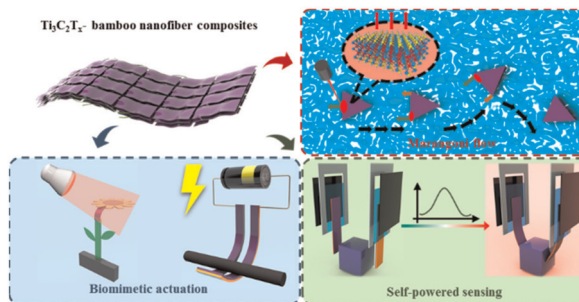
Colette M. Sullivan, Jason E. Kuszynski, Alexey Kovalev, Theo Siegrist, Richard D. Schaller, Geoffrey F. Strouse and Lea Nienhaus\*



18842

**Multifunctional actuators integrated with the function of self-powered temperature sensing made with  $Ti_3C_2T_x$ -bamboo nanofiber composites**

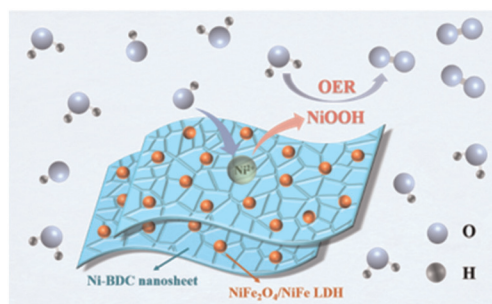
Kaihuai Yang,\* Junjie Lin, Congchun Fu, Jing Guo, Jiahao Zhou, Fengliang Jiao, Qiaohang Guo, Peidi Zhou\* and Mingcen Weng\*



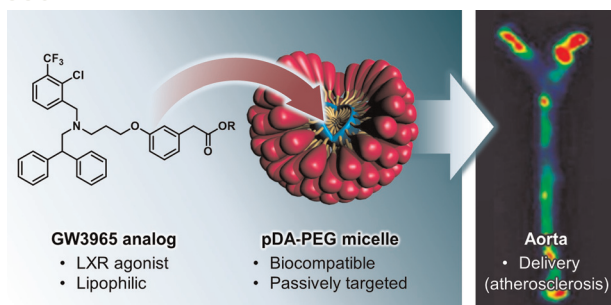
18858

**Accelerating structure reconstruction to form NiOOH in metal-organic frameworks (MOFs) for boosting the oxygen evolution reaction**

Ruiyao Hou, Xiaoxia Yang, Linghui Su, Wanglai Cen, Lin Ye and Dengrong Sun\*



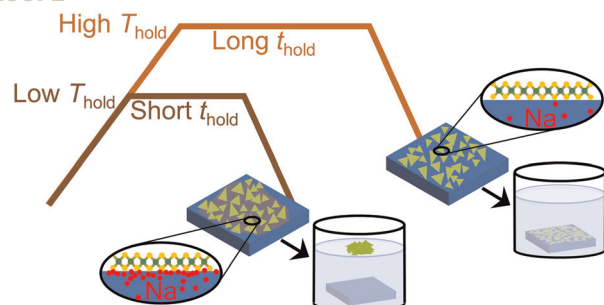
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### Targeted delivery of LXR-agonists to atherosclerotic lesions mediated by polydiacetylene micelles

Lucie Jamgotchian, Laurent Devel,\* Robert Thai, Lucie Poupel, Thierry Huby, Emmanuel Gautier, Wilfried Le Goff, Philippe Lesnik,\* Edmond Gravel\* and Eric Doris\*

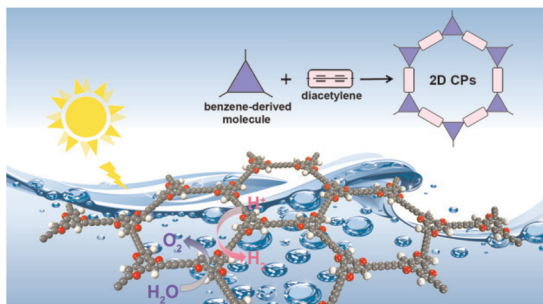
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### CVD of $\text{MoS}_2$ single layer flakes using $\text{Na}_2\text{MoO}_4$ – impact of oxygen and temperature–time-profile

Romana Alice Kalt, Andrea Arcifa, Christian Wäckerlin and Andreas Stemmer\*

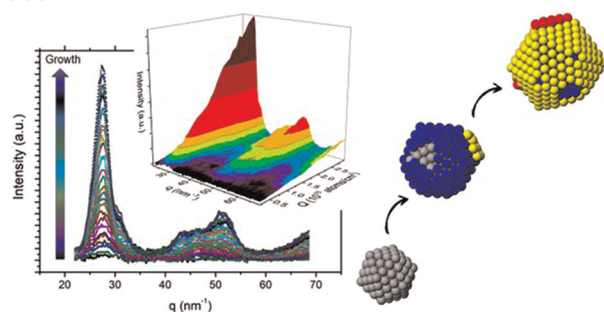
18883



### Tunable covalent benzo-heterocyclic rings constructed using two-dimensional conjugated polymers for visible-light-driven water splitting

Cong Wang, Ying-Nan Zhao, Zhong-Ling Lang,\* Yang-Guang Li, Zhong-Min Su and Hua-Qiao Tan\*

18891



### Sudden collective atomic rearrangements trigger the growth of defect-free silver icosahedra

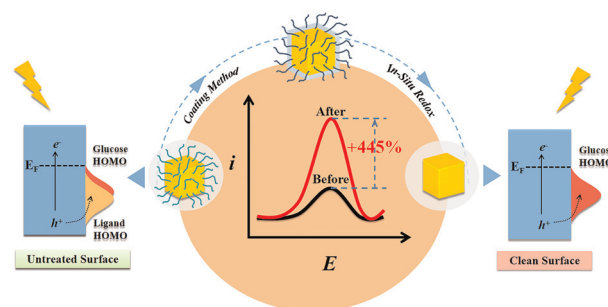
Diana Nelli, Cesare Roncaglia, Riccardo Ferrando,\* Zeinab Kataya, Yves Garreau, Alessandro Coati, Caroline Andreazza-Vignolle and Pascal Andreazza\*



18901

### Boosting plasmon-enhanced electrochemistry by *in situ* surface cleaning of plasmonic nanocatalysts

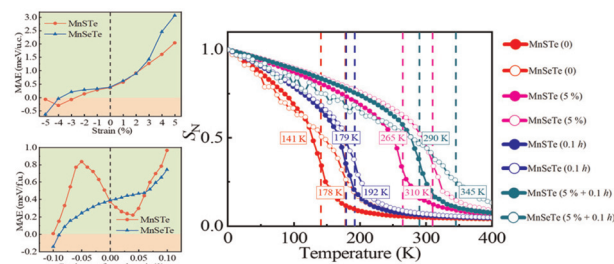
Yu Wang, Xueqing Sang, Fengxia Wu, Yuanhao Pang, Guobao Xu, Yali Yuan,\* Hsien-Yi Hsu and Wenxin Niu\*



18910

### High spin polarization, large perpendicular magnetic anisotropy and room-temperature ferromagnetism by biaxial strain and carrier doping in Janus MnSeTe and MnSTe

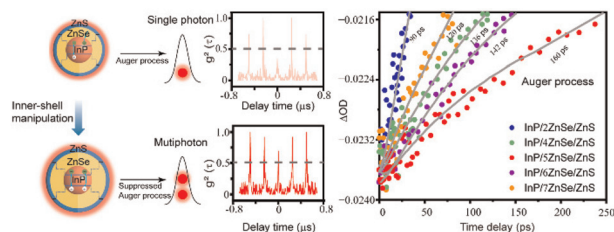
Long Zhang, Yan Zhao, Yuqi Liu and Guoying Gao\*



18920

### Suppressed Auger recombination and enhanced emission of InP/ZnSe/ZnS quantum dots through inner shell manipulation

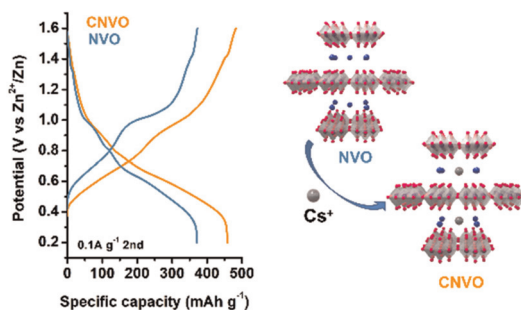
Yaru Chen, Rixin Wang, Yanmin Kuang,\* Yangyang Bian, Fei Chen, Huaibin Shen, Zhen Chi, Xia Ran and Lijun Guo\*



18928

### Cesium-doped ammonium vanadium bronze nanosheets as high capacity aqueous zinc-ion battery cathodes with long cycle life and superb rate capability

Xinyu Lei, Hao Du, Haiyang Li, Meng Zhang,\* Hanlu Zhang, Yiliang Jin and Jiarui Zhang



## EXPRESSION OF CONCERN

18939

**Expression of concern: Versatile plasmonic-effects at the interface of inverted perovskite solar cells**

Ahmed Esmail Shalan, Tomoya Oshikiri, Hiroki Sawayanagi, Keisuke Nakamura, Kosei Ueno, Quan Sun, Hui-Ping Wu, Eric Wei-Guang Diao\* and Hiroaki Misawa\*

## CORRECTIONS

18940

**Correction: Integrated 4-terminal single-contact nanoelectromechanical relays implemented in a silicon-on-insulator foundry process**

Yingying Li, Elliott Worsley, Simon J. Bleiker, Pierre Edinger, Mukesh Kumar Kulsreshath, Qi Tang, Alain Yuji Takabayashi, Niels Quack, Peter Verheyen, Wim Bogaerts, Kristinn B. Gylfason, Dinesh Pamunuwa\* and Frank Niklaus\*

18941

**Correction: Ferromagnetic and half-metallic phase transition by doping in a one-dimensional narrow-bandgap  $W_6P_{17}$  semiconductor**

Yusen Qiao and Huabing Yin\*

