

## IN THIS ISSUE

ISSN 2040-3372 CODEN NANOHL 15(40) 16231–16502 (2023)

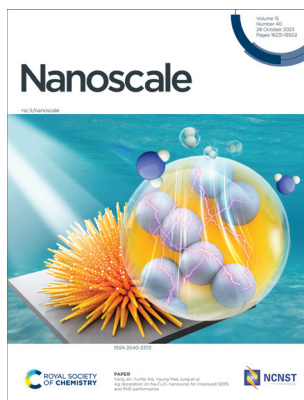


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See Mallar Ray *et al.*, pp. 16268–16277.

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### Inside cover

See Yang Jin, Yunfei Xie, Young Mee Jung *et al.*, pp. 16278–16289.

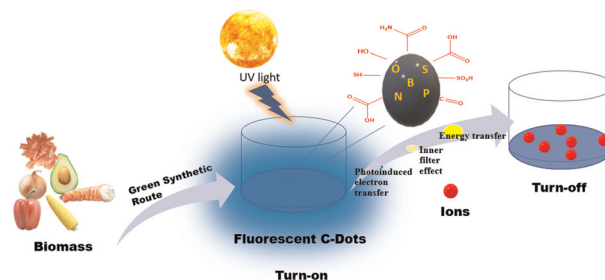
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## REVIEW

16241

### Assessment of biomass-derived carbon dots as highly sensitive and selective templates for the sensing of hazardous ions

Permender Singh, Arpita, Sandeep Kumar,\* Parmod Kumar, Navish Kataria, Vinita Bhankar, Krishan Kumar,\* Ravi Kumar, Chien-Te Hsieh\* and Kuan Shiong Khoo\*

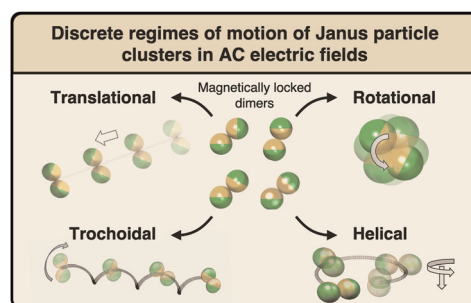


## COMMUNICATION

16268

### Magnetically locked Janus particle clusters with orientation-dependent motion in AC electric fields

Jin Gyun Lee, Cooper P. Thome, Zoe A. Cruse, Arkava Ganguly, Ankur Gupta and C. Wyatt Shields, IV\*



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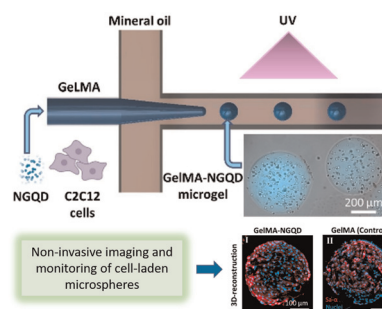


## PAPERS

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### Nitrogen-functionalized graphene quantum dot incorporated GelMA microgels as fluorescent 3D-tissue Constructs

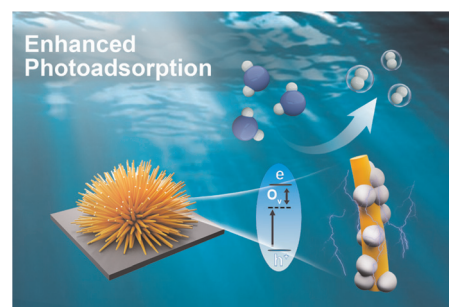
Aida Zahra Taravatfard, Carlos Ceballos-Gonzalez, Abu Bakar Siddique, Johana Bolivar-Monsalve, Masoud Madadelahi, Grissel Trujillo-de Santiago, Mario Moisés Alvarez, Ashit Kumar Pramanick, Eduardo Martinez Guerra, Lawrence Kulinsky, Marc J. Madou, Sergio O. Martinez and Mallar Ray\*



16287

### Ag decoration on $\text{Na}_2\text{Ti}_3\text{O}_7$ nanowires for improved SERS and PHE performance

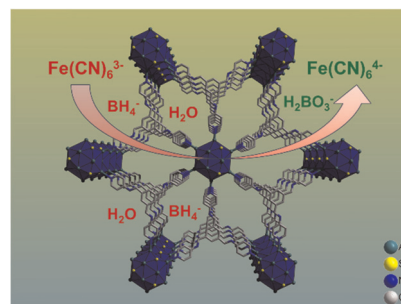
Lei Chen, Yang Jin,\* Shuang Guo, Eungyeong Park, Yunfei Xie\* and Young Mee Jung\*



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### A new two-dimensional luminescent $\text{Ag}_{12}$ cluster-assembled material and its catalytic activity for reduction of hexacyanoferrate(III)

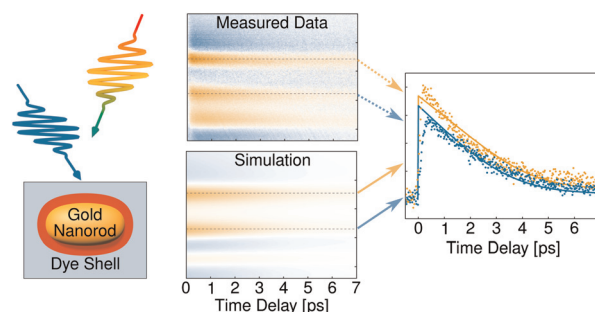
Riki Nakatani, Sourav Biswas, Tsukasa Irie, Jin Sakai, Daisuke Hirayama, Tokuhisa Kawawaki, Yoshiki Niihori, Saikat Das\* and Yuichi Negishi\*



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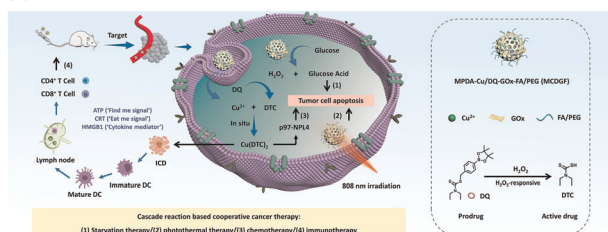
### Ultrafast dynamics in plasmon–exciton core–shell systems: the role of heat

Felix Stete, Matias Bargheer and Wouter Koopman\*



## PAPERS

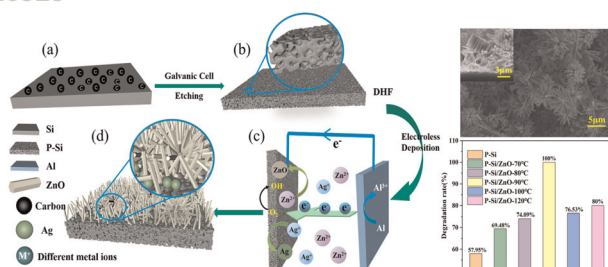
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### A cascade nanoplatform for the regulation of the tumor microenvironment and combined cancer therapy

Xiaochun Hu, Wenrong Zhao, Ruihao Li, Keke Chai, Fangjian Shang, Shuo Shi\* and Chunyan Dong\*

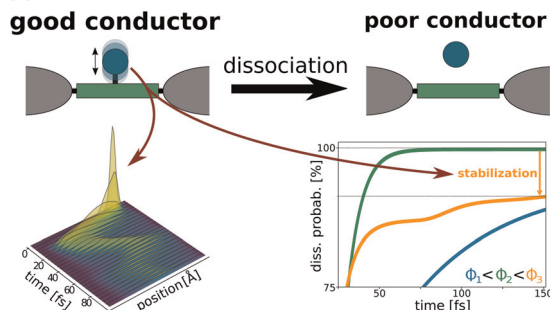
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### Fabrication of a P-Si/ZnO heterojunction based on galvanic cell driven and the complete degradation of RhB via fast charge transfer

Xiaoyu Yang, Lin Wu, Baoguo Zhang, Jingwang Li, Yifan Shen, Ying Liu\* and Ya Hu\*

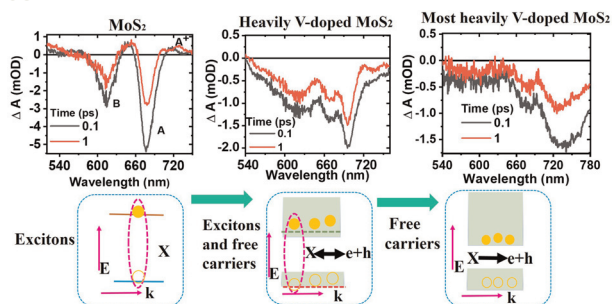
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### How an electrical current can stabilize a molecular nanojunction

André Erpenbeck,\* Yaling Ke, Uri Peskin and Michael Thoss

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### Ultrafast carrier dynamics in vanadium-doped MoS<sub>2</sub> alloys

Bhuvan Upadhyay, Rahul Sharma, Dipak Maity, Tharangattu N. Narayan and Suman Kalyan Pal\*



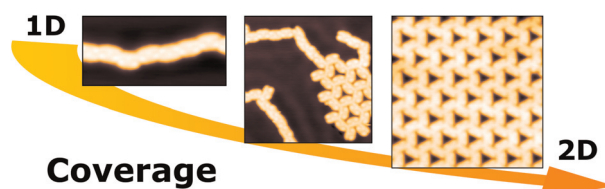


## PAPERS

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**Coverage-modulated halogen bond geometry transformation in supramolecular assemblies**

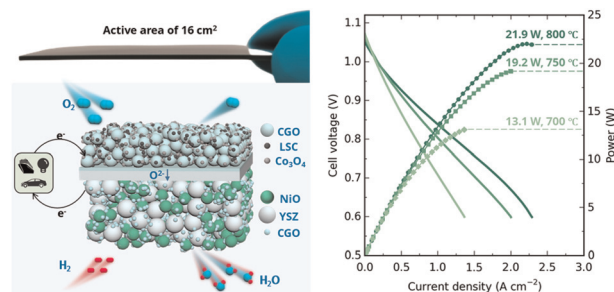
Alejandro Jiménez-Martín, Aurelio Gallardo\* and Bruno de la Torre\*



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**Nanoengineering of electrodes *via* infiltration: an opportunity for developing large-area solid oxide fuel cells with high power density**

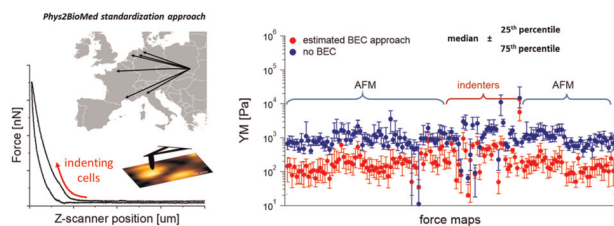
Xiaofeng Tong,\* Chen Li, Kaikuo Xu, Ningling Wang, Karen Brodersen, Zhibin Yang and Ming Chen\*



16371

**Reliable, standardized measurements for cell mechanical properties**

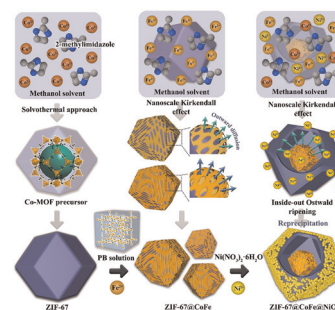
S. Pérez-Domínguez, S. G. Kulkarni, J. Pabijan, K. Gnanachandran, H. Holuigue, M. Eroles, E. Lorenc, M. Berardi, N. Antonovaite, M. L. Marini, J. Lopez Alonso, L. Redonto-Morata, V. Dupres, S. Janel, S. Acharya, J. Otero, D. Navajas, K. Bielawski, H. Schillers, F. Lafont, F. Rico, A. Podestà,\* M. Radmacher\* and M. Lekka\*



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**A multi-layer core–shell structure CoFe<sub>2</sub>O<sub>4</sub>@Fe<sub>3</sub>C@NiO composite with high broadband electromagnetic wave-absorption performance**

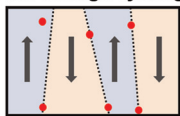
Wei Si, Qingwei Liao,\* Yu Chu, Zhiwei Zhang, Xiangcheng Chu\* and Lei Qin\*



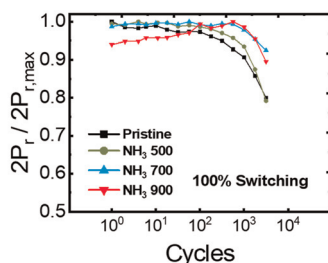
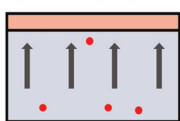
## PAPERS

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## Low voltage cycling



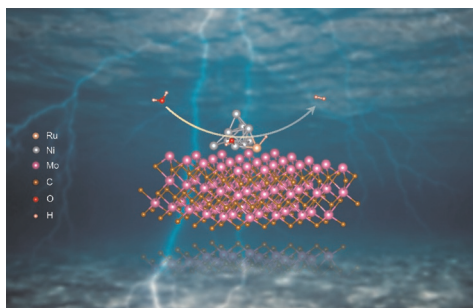
## High voltage cycling



### Impact of operation voltage and NH<sub>3</sub> annealing on the fatigue characteristics of ferroelectric AlScN thin films grown by sputtering

Kyung Do Kim, Yong Bin Lee, Suk Hyun Lee, In Soo Lee, Seung Kyu Ryoo, Seung Yong Byun, Jae Hoon Lee and Cheol Seong Hwang\*

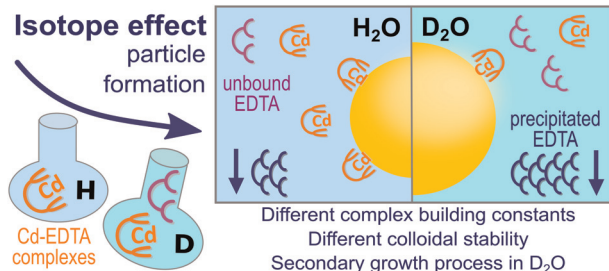
16403



### Regulation of the electronic structure of a RuNi/MoC electrocatalyst for high-efficiency hydrogen evolution in alkaline seawater

Xiaocheng Fan, Bei Li, Chunling Zhu,\* Feng Yan\* and Yujin Chen\*

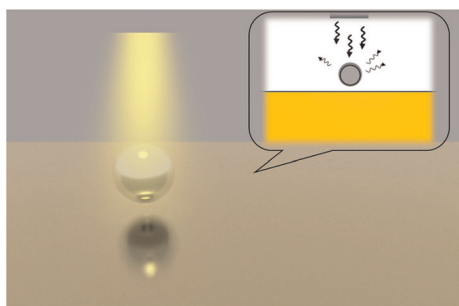
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### The H-D-isotope effect of heavy water affecting ligand-mediated nanoparticle formation in SANS and NMR experiments

Sebastian W. Krauss, Mirco Eckardt, Johannes Will, Erdmann Spiecker, Renée Siegel, Martin Dulle, Ralf Schweins, Brian Pauw, Jürgen Senker and Mirjam Zobel\*

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### Investigation of high-order resonant modes for aluminium nanoparticles (arrays) using the finite-difference time-domain method

Zhen Wang, Jinqiao Lu, Zilong Wang, Jie Huang, Le Wang, Qiang Chen, Yunfeng Li,\* Yongxing Jin\* and Pei Liang\*

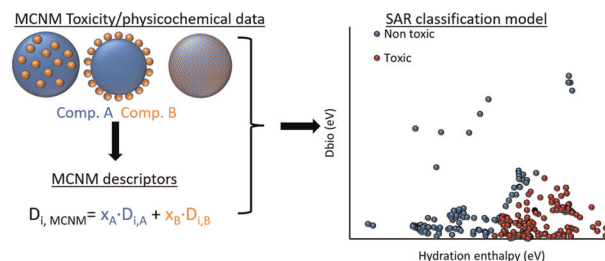


## PAPERS

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# A structure–activity approach towards the toxicity assessment of multicomponent metal oxide nanomaterials

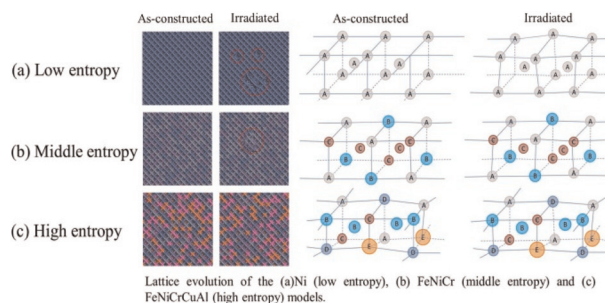
G. P. Gakis, I. G. Aviziotis and C. A. Charitidis\*



16447

# Lattice distortion and re-distortion affecting irradiation tolerance in high entropy alloys

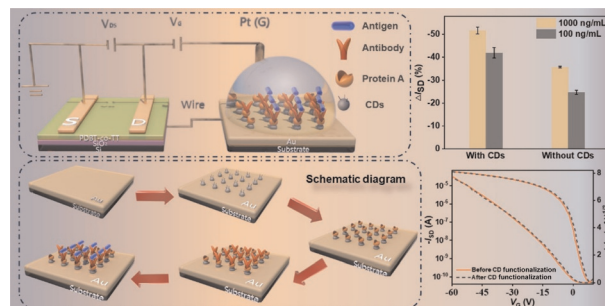
Peng-wei Wang, Ming-fei Li, Babafemi Malomo and Liang Yang\*



16458

# Carbon dots-functionalized extended gate organic field effect transistor-based biosensors for low abundance proteins

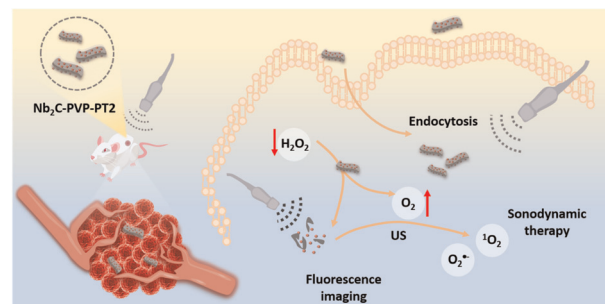
Yanmin Zhang, Chenfang Sun, Yuchen Duan, Shanshan Cheng\* and Wenping Hu



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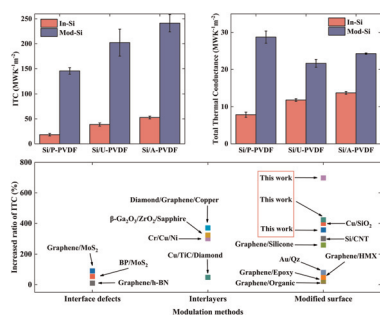
# Catalase-like pleated niobium carbide MXene loaded with polythiophene for oxygenated sonodynamic therapy in solid tumor

E Pang, Baoling Li, Chuanling Zhou, Shaojing Zhao, Yu Tang, Qiuxia Tan, Chaoyi Yao, Benhua Wang, Kai Han,\* Xiangzhi Song, Zheyu Hu, Quchang Ouyang,\* Shiguang Jin\* and Minhuan Lan\*



## PAPERS

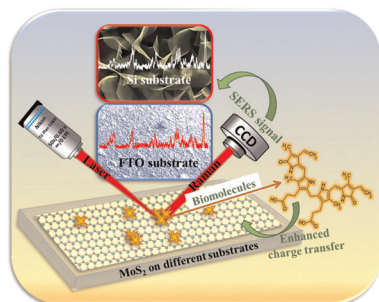
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### Enhancing the interfacial thermal conductance of Si/PVDF by strengthening atomic couplings

Zhicheng Zong, Shichen Deng, Yangjun Qin, Xiao Wan, Jiahong Zhan, Dengke Ma and Nuo Yang\*

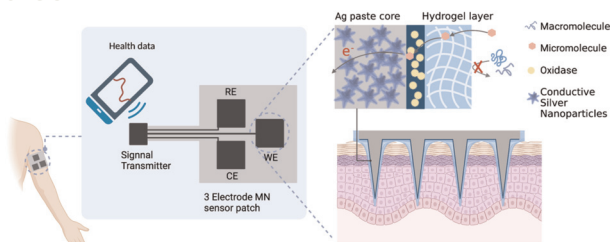
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### Large area CVD-grown vertically and horizontally oriented MoS<sub>2</sub> nanostructures as SERS biosensors for single molecule detection

Ankita Singh and Ashish Kumar Mishra\*

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### A nanometallic conductive composite-hydrogel core-shell microneedle skin patch for real-time monitoring of interstitial glucose levels

Yuyue Zhang, Guangyao Zhao, Mengjia Zheng, Tianli Hu, Cheng Yang\* and Chenjie Xu\*

