

# Nanoscale Advances

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## IN THIS ISSUE

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**Cover**  
See Ning Zhang, Lan Dai, Wen Di *et al.*, pp. 4082–4093. Image reproduced by permission of Lan Dai from *Nanoscale Adv.*, 2024, **6**, 4082.

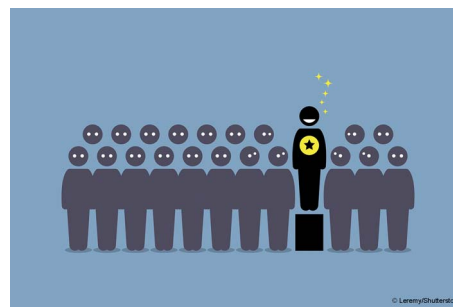


**Inside cover**  
See K. Gayathri and R. Vidya, pp. 3992–4014. Image reproduced by permission of K. Gayathri and R. Vidya from *Nanoscale Adv.*, 2024, **6**, 3992.

## EDITORIAL

3991

**Outstanding Reviewers for *Nanoscale Advances* in 2023**

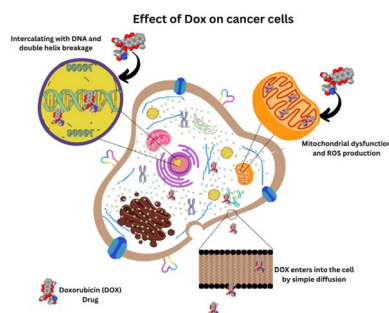


## REVIEWS

3992

**Carbon nanomaterials as carriers for the anti-cancer drug doxorubicin: a review on theoretical and experimental studies**

K. Gayathri and R. Vidya\*



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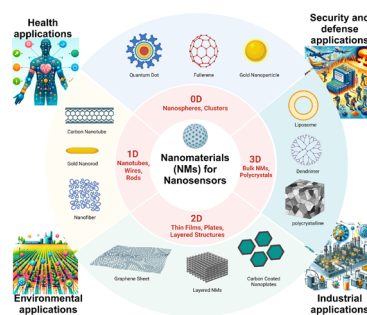
Fundamental questions  
Elemental answers

## REVIEWS

4015

**Advancements in nanomaterials for nanosensors: a comprehensive review**

Moustafa A. Darwish,\* Walaa Abd-Elaziem, Ammar Elsheikh and Abdelhameed A. Zayed



4047

**Recent advances in the biosynthesis of ZnO nanoparticles using floral waste extract for water treatment, agriculture and biomedical engineering**

Duyen Thi Cam Nguyen, Ngoan Thi Thao Nguyen, Thuy Thi Thanh Nguyen and Thuan Van Tran\*

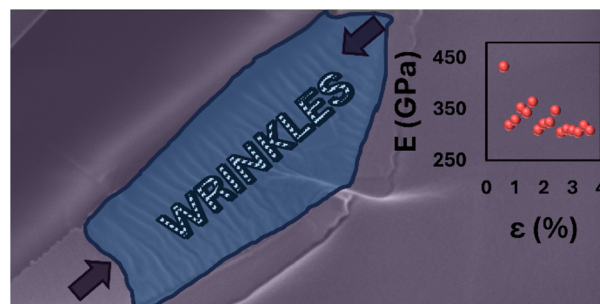


## COMMUNICATIONS

4062

**Strain engineering of the mechanical properties of two-dimensional WS<sub>2</sub>**

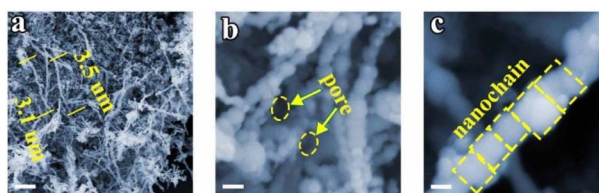
Yarden Mazal Jahn, Guy Alboteanu, Dan Mordehai and Assaf Ya'akovitz\*



4071

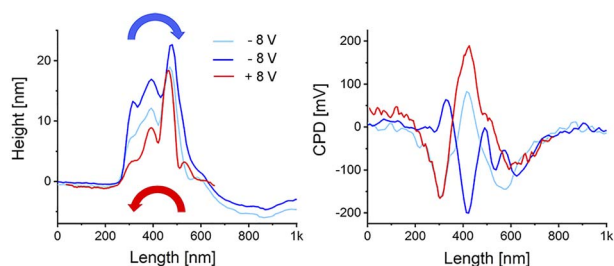
**Accelerating the electron-transfer of nitrogen electro-fixation through assembling Fe nanoparticles into Fe nanochains**

Rongkang Wang,\* Jingyu Lu,\* Xu Li and Chunyu Song



## COMMUNICATIONS

4075

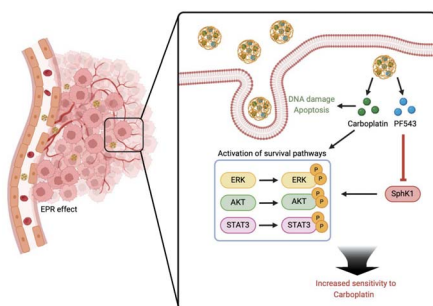


### Modulations of the work function and morphology of a single MoS<sub>2</sub> nanotube by charge injection

Maja Remškar,\* Janez Jelenc, Nikolai Czepurnyi, Matjaž Malok, Luka Pirker, Rupert Schreiner and Andreas K. Hüttel

## PAPERS

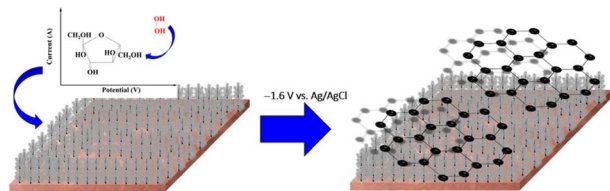
4082



### Nanoparticle co-delivery of carboplatin and PF543 restores platinum sensitivity in ovarian cancer models through inhibiting platinum-induced pro-survival pathway activation

Chen Wang, Qing Li, Keqi Song, Wenjing Wang, Ning Zhang,\* Lan Dai\* and Wen Di\*

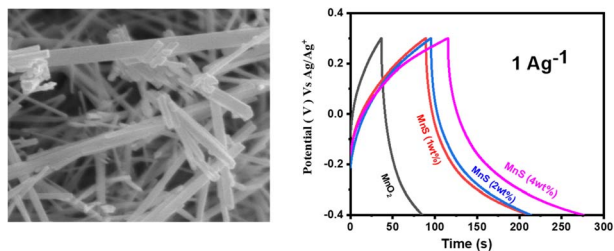
4094



### Room temperature synthesis of 3D-nanocrystalline graphitic carbon from biomass-derived sugars, alcohols, and polyphenolic compounds

Wiyanti Fransisca Simanullang, Rungkiat Nganglumpoon, Suthasinee Watmanee, Piriya Pinthong, Weerachon Tolek, Yan Liu and Joongjai Panpranot\*

4103



### Improved electrochemical performance of defect-induced supercapacitor electrodes based on MnS-incorporated MnO<sub>2</sub> nanorods

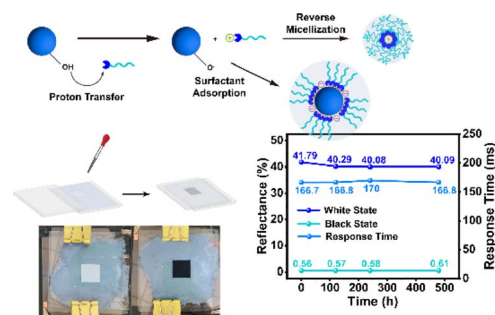
Mizanur Rahaman, Md. Roxy Islam and Muhammad Rakibul Islam\*



4111

## Adjusting the charging behavior of TiO<sub>2</sub> with basic surfactants in an apolar medium for electrophoretic displays

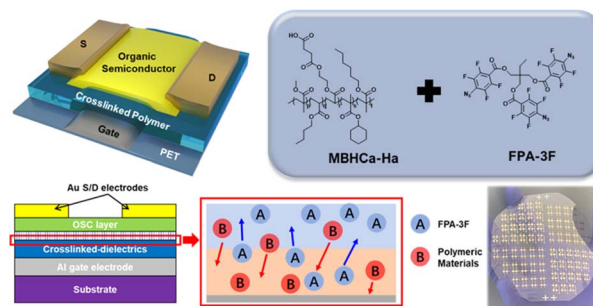
Yanfang Yu, Hongli Liu, Yinzhao Zhen, Ye Liu, Bonan Gao, Xianggao Li and Shirong Wang\*



4119

## Surface engineering of high-*k* polymeric dielectric layers with a fluorinated organic crosslinker for use in flexible-platform electronics

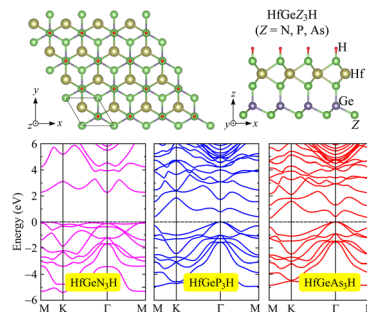
Heqing Ye, Hyeok-jin Kwon, Ka Yeon Ryu, Kaibin Wu, Jeongwan Park, Giri Babita, Inae Kim, Chanwoo Yang, Hoyoul Kong\* and Se Hyun Kim\*



4128

## Large piezoelectric responses and ultra-high carrier mobility in Janus HfGeZ<sub>3</sub>H (Z = N, P, As) monolayers: a first-principles study

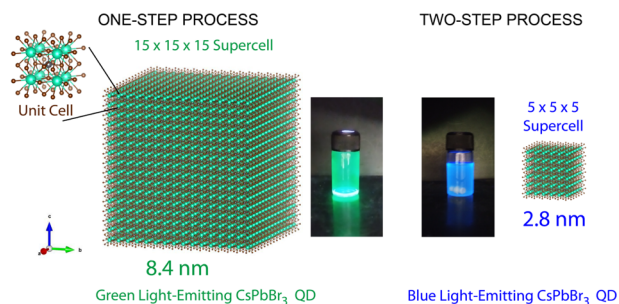
Tuan V. Vu, Huynh V. Phuc,\* Le T. T. Phuong, Vo T. T. Vi, A. I. Kartamyshev and Nguyen N. Hieu\*



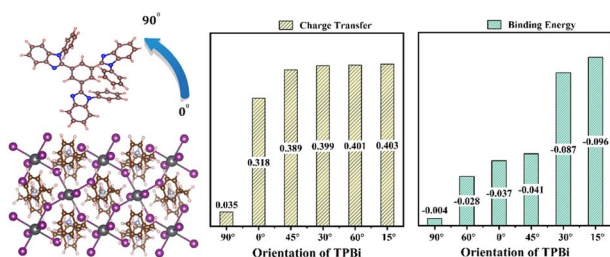
4137

## Cesium lead bromide perovskite nanocrystals synthesized via supersaturated recrystallization at room temperature: comparison of one-step and two-step processes

Dula Adugna Idosa, Muluaalem Abebe, Dhakshnamoorthy Mani, Jibin Keloth Paduvilan, Lishin Thottathi, Aparna Thankappan, Sabu Thomas and Jung Yong Kim\*



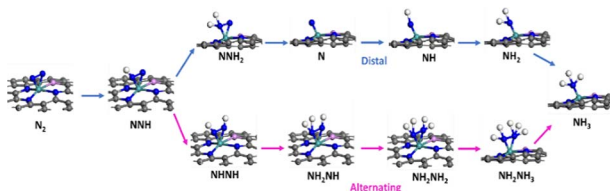
4149



### Computational approaches to enhance charge transfer and stability in TPBi-(PEA)<sub>2</sub>PbI<sub>4</sub> perovskite interfaces through molecular orientation optimization

Syed Muhammad Kazim Abbas Naqvi, Yanan Zhu,<sup>\*</sup> Hui Long, Zahid Nazir, Roman B. Vasiliev, Olga Kulakovich and Shuai Chang<sup>\*</sup>

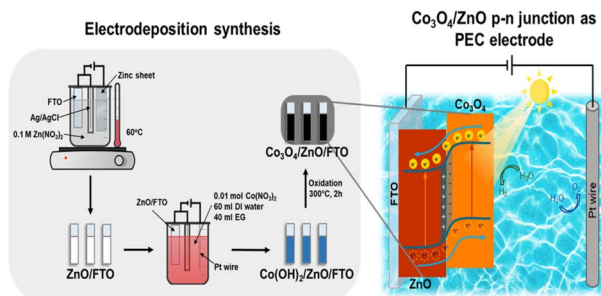
4160



### Designing N, P-doped graphene surface-supported Mo single-atom catalysts for efficient conversion of nitrogen into ammonia: a computational guideline

Ghada E. Khedr, Samar M. Fawzy, Icell M. Sharafeldin and Nageh K. Allam<sup>\*</sup>

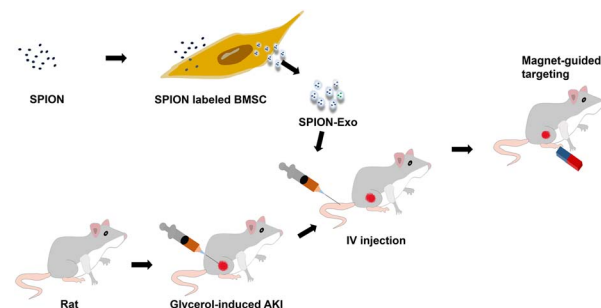
4167



### Straightforward electrochemical synthesis of a Co<sub>3</sub>O<sub>4</sub> nanopetal/ZnO nanoplate p-n junction for photoelectrochemical water splitting

Khanh Quang Nguyen, Hoang Thai Nguyen, Thach Khac Bui, Tien-Thanh Nguyen and Viet Van Pham<sup>\*</sup>

4180



### Targeted treatment of rat AKI induced by rhabdomyolysis using BMSC derived magnetic exosomes and its mechanism

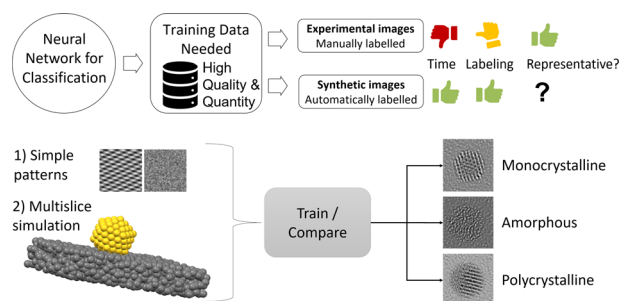
Yuling Chen<sup>\*</sup> and Shike Hou



4196

### Simulated HRTEM images of nanoparticles to train a neural network to classify nanoparticles for crystallinity

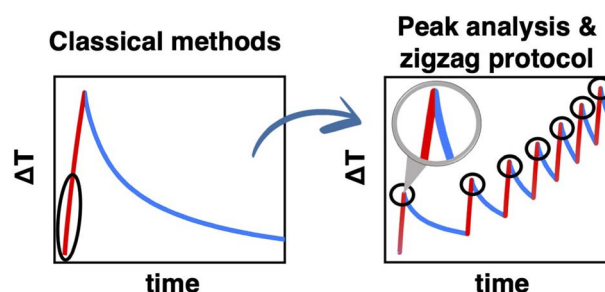
Nina Gumbiowski, Juri Barthel, Kateryna Loza, Marc Heggen and Matthias Eppe\*



4207

### Beyond Newton's law of cooling in evaluating magnetic hyperthermia performance: a device-independent procedure

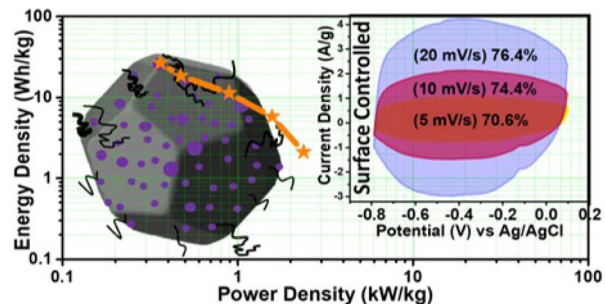
Sergiu Ruta,\* Yilian Fernández-Afonso, Samuel E. Rannala, M. Puerto Morales, Sabino Veintemillas-Verdaguer, Carlton Jones, Lucía Gutiérrez,\* Roy W. Chantrell and David Serantes



4219

### Analyzing the charge contributions of metal–organic framework derived nanosized cobalt nitride/carbon composites in asymmetrical supercapacitors

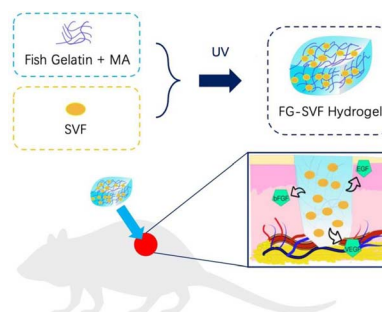
Vishal Shrivastav,\* Mansi, Prashant Dubey, Umesh K. Tiwari, Akash Deep, Wojciech Nogala\* and Shashank Sundriyal\*



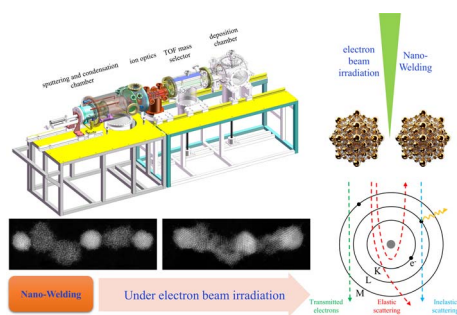
4230

### A tilapia skin-derived gelatin hydrogel combined with the adipose-derived stromal vascular fraction for full-thickness wound healing

Yanan Luo, Manfei Fu, Ziyi Zhou, Xiaopei Zhang, Qingxia Guo, Yawen Wang, Weina Zhang, Yuanfei Wang,\* Zhenyu Chen\* and Tong Wu\*



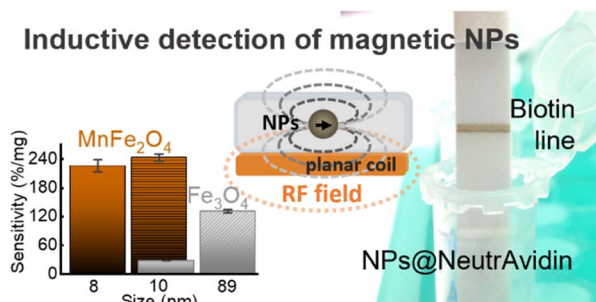
4237



### Coalescence behavior of size-selected gold and tantalum nanoclusters under electron beam irradiation: insights into nano-welding mechanisms

Shengyong Hu, Syed Adil Shah, Syed Niaz Ali Shah, Zixiang Zhao, Wuwen Zhu, Yongxin Zhang, Siqi Lu, Sichen Tang, Kuo-Juei Hu\* and Fengqi Song\*

4247



### Mn-ferrite nanoparticles as promising magnetic tags for radiofrequency inductive detection and quantification in lateral flow assays

Vanessa Pilati,\* María Salvador, Leyre Bei Fraile, José Luis Marqués-Fernández, Franciscarlos Gomes da Silva, Mona Fadel, Ricardo López Antón, María del Puerto Morales, José Carlos Martínez-García and Montserrat Rivas

## CORRECTION

4259

### Correction: Beyond Newton's law of cooling in evaluating magnetic hyperthermia performance: a device-independent procedure

Sergiu Ruta,\* Yilian Fernández-Afonso, Samuel E. Rannala, M. Puerto Morales, Sabino Veintemillas-Verdaguer, Carlton Jones, Lucía Gutiérrez,\* Roy W. Chantrell and David Serantes

