

# Nanoscale Advances

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## IN THIS ISSUE

ISSN 2516-0230 CODEN NAADAI 6(16) 3981–4262 (2024)



**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.

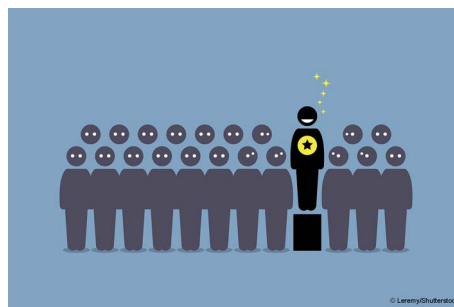


**Inside cover**  
See K. Gayathri and R. Vidya, pp. 3992–4014. Image reproduced by permission of K. Gayathri and R. Vidya from *Nanoscale Adv.*, 2024, **6**, 3992.

## EDITORIAL

3991

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

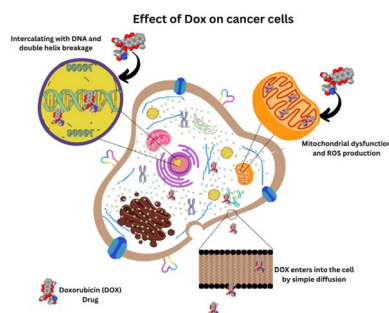


## REVIEWS

3992

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

K. Gayathri and R. Vidya\*



# ChemComm

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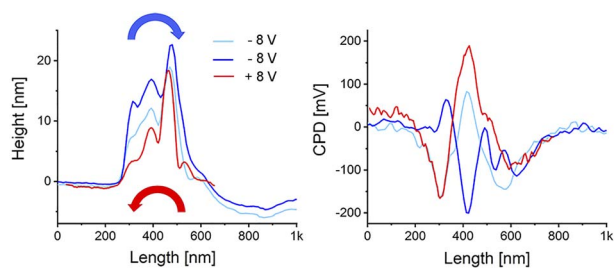
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Fundamental questions  
Elemental answers



## COMMUNICATIONS

4075

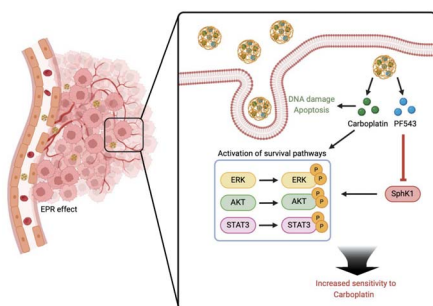


### Modulations of the work function and morphology of a single MoS<sub>2</sub> nanotube by charge injection

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

## PAPERS

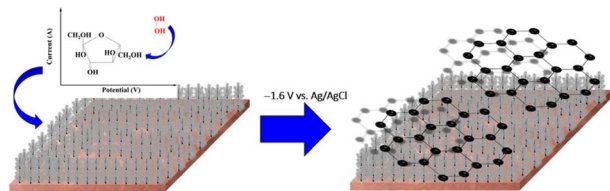
4082



### 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\*

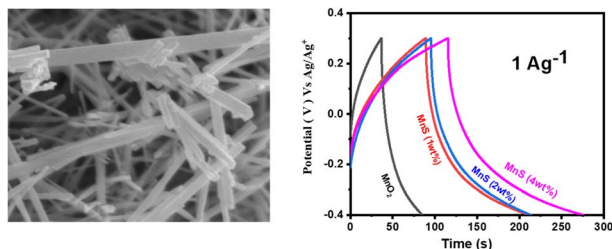
4094



### 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

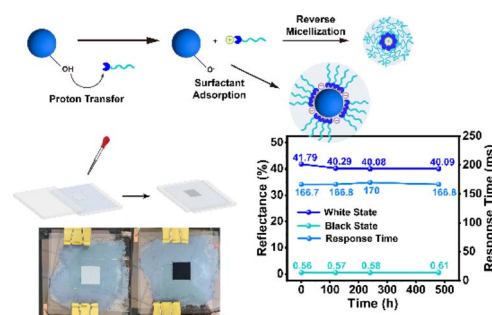
Mizanur Rahaman, Md. Roxy Islam and Muhammad Rakibul Islam\*



4111

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

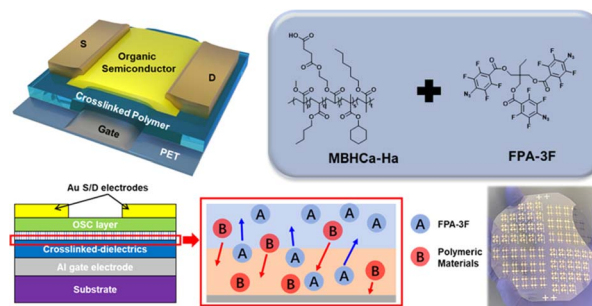
Yanfang Yu, Hongli Liu, Yinzhao Zhen, Ye Liu, Bonan Gao, Xianggao Li and Shirong Wang\*



4119

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

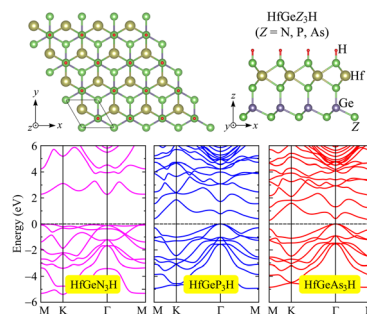
Heqing Ye, Hyeok-jin Kwon, Ka Yeon Ryu, Kaibin Wu, Jeongwan Park, Giri Babita, Inae Kim, Chanwoo Yang, Hoyoul Kong\* and Se Hyun Kim\*



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

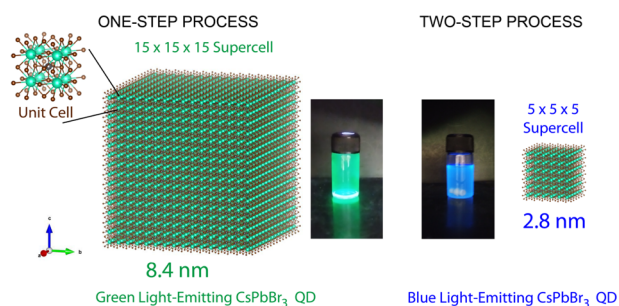
Tuan V. Vu, Huynh V. Phuc,\* Le T. T. Phuong, Vo T. T. Vi, A. I. Kartamyshev and Nguyen N. Hieu\*



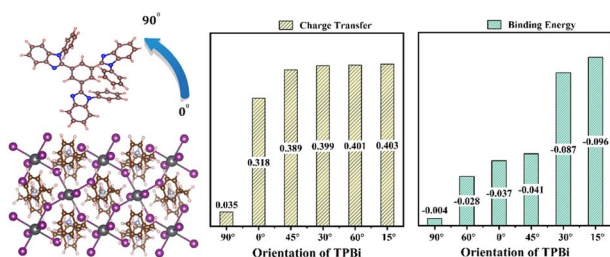
4137

## 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\*



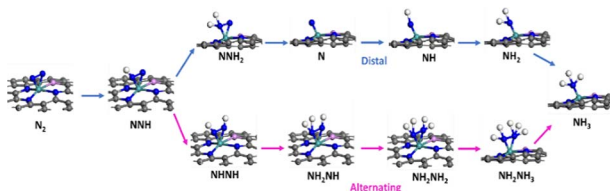
4149



### 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,\*  
Hui Long, Zahid Nazir, Roman B. Vasiliev, Olga Kulakovich  
and Shuai Chang\*

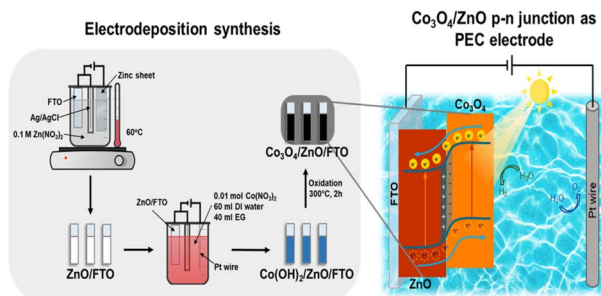
4160



### 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\*

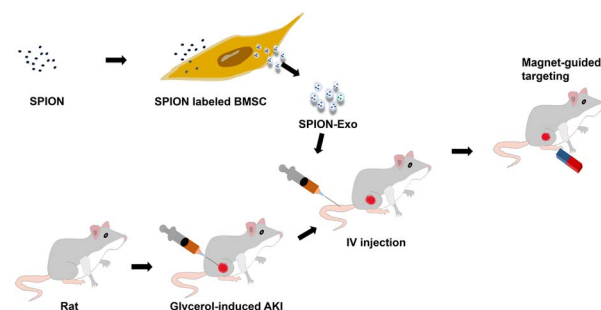
4167



### 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\*

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

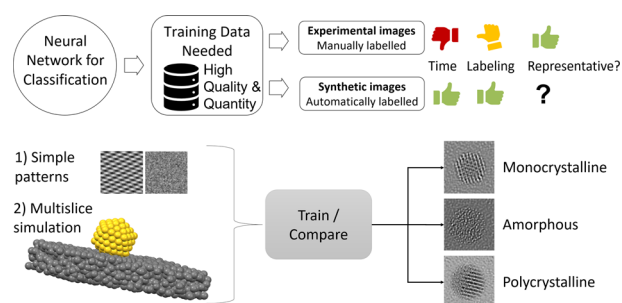
Yuling Chen\* and Shike Hou



4196

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

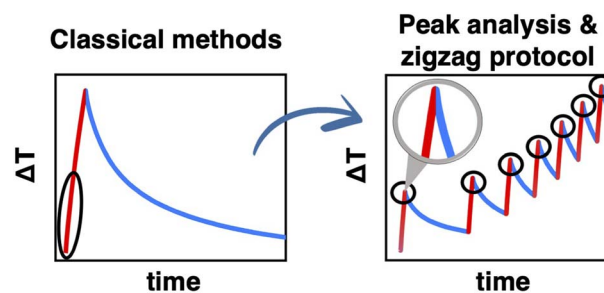
Nina Gumbiowski, Juri Barthel, Kateryna Loza, Marc Heggen and Matthias Eppl<sup>\*</sup>



4207

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

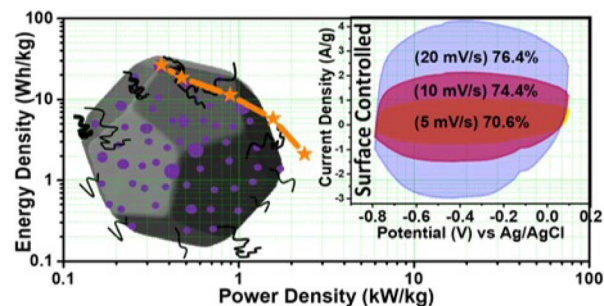
Sergiu Ruta,<sup>\*</sup> Yilian Fernández-Afonso, Samuel E. Rannala, M. Puerto Morales, Sabino Veintemillas-Verdaguer, Carlton Jones, Lucía Gutiérrez,<sup>\*</sup> Roy W. Chantrell and David Serantes



4219

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

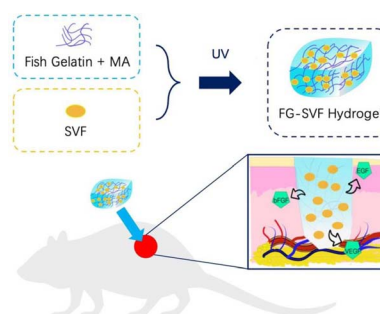
Vishal Shrivastav,<sup>\*</sup> Mansi, Prashant Dubey, Umesh K. Tiwari, Akash Deep, Wojciech Nogala<sup>\*</sup> and Shashank Sundriyal<sup>\*</sup>



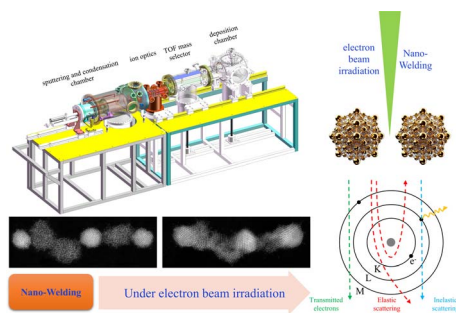
4230

## 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,<sup>\*</sup> Zhenyu Chen<sup>\*</sup> and Tong Wu<sup>\*</sup>



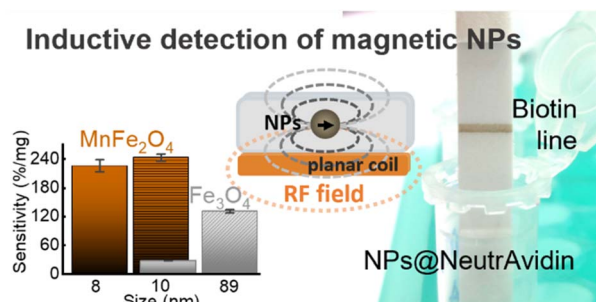
4237



### 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

