

# Nanoscale Advances

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## IN THIS ISSUE

ISSN 2516-0230 CODEN NAADAI 5(17) 4301–4612 (2023)



**Cover**  
See Giuliana Grasso, Loretta L. del Mercato *et al.*, pp. 4311–4336.  
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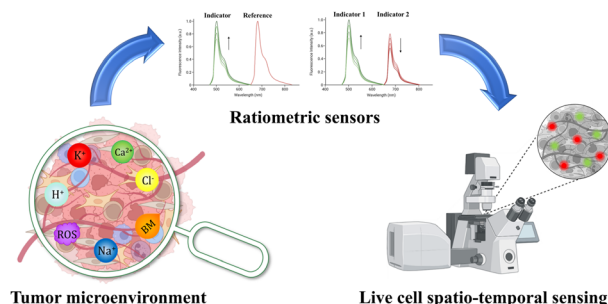
**Inside cover**  
See Daria Miliaieva *et al.*, pp. 4402–4414. Image reproduced by permission of Daria Miliaieva, Bohuslav Rezek, Vojtech Nádaždy from *Nanoscale Adv.*, 2023, 5, 4402.

## REVIEWS

4311

### Fluorescent nano- and microparticles for sensing cellular microenvironment: past, present and future applications

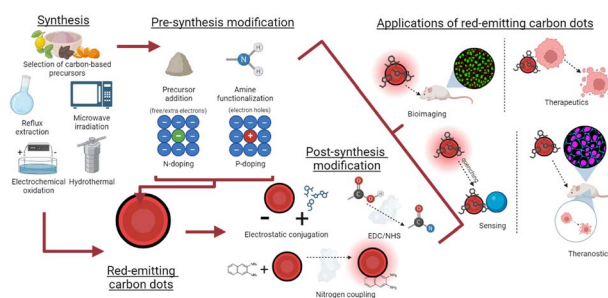
Giuliana Grasso,\* Francesco Colella, Stefania Forciniti, Valentina Onesto, Helena Luele, Anna Chiara Siciliano, Federica Carnevali, Anil Chandra, Giuseppe Gigli and Loretta L. del Mercato\*



4337

### Red emitting carbon dots: surface modifications and bioapplications

Dawson Benner, Pankaj Yadav and Dhiraj Bhatia\*



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Nanoscale Advances (electronic: ISSN 2516-0230) is published 24 times a year by the Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, UK CB4 0WE.

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Published in collaboration with the National Centre for Nanoscience and Technology, Beijing, China

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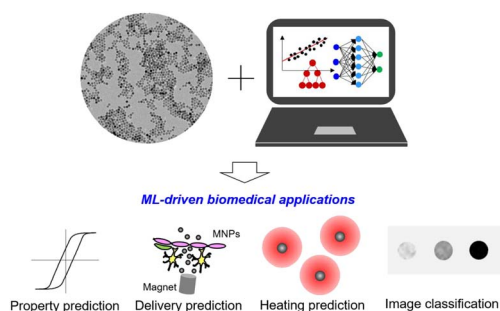


## REVIEWS

4354

### Machine learning assisted-nanomedicine using magnetic nanoparticles for central nervous system diseases

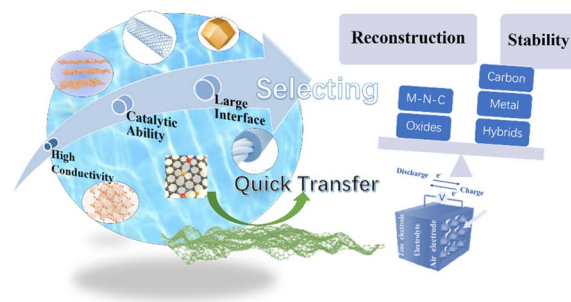
Asahi Tomitaka,\* Arti Vashist, Nagesh Kolishetti and Madhavan Nair\*



4368

### Recent advances of bifunctional catalysts for zinc air batteries with stability considerations: from selecting materials to reconstruction

Wanqi Tang, Jiarong Mai, Lili Liu,\* Nengfei Yu,\* Lijun Fu, Yuhui Chen, Yankai Liu, Yuping Wu\* and Teunis van Ree

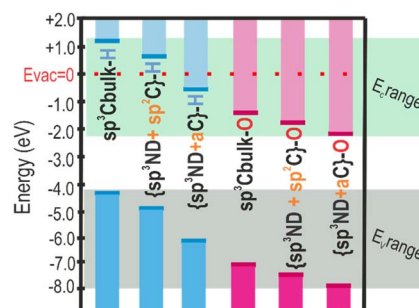


## PAPERS

4402

### Absolute energy levels in nanodiamonds of different origins and surface chemistries

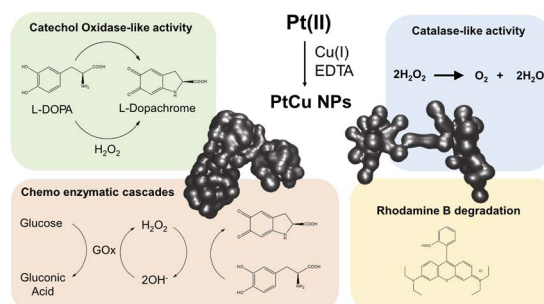
Daria Miliáieva,\* Aurelien Sokeng Djoumessi, Jan Čermák, Kateřina Kolářová, Maximilian Schaal, Felix Otto, Ekaterina Shagieva, Olexandr Romanyuk, Jiří Pangrác, Jaroslav Kuliček, Vojtech Nádaždy, Štěpán Stehlík, Alexander Kromka, Harald Hoppe and Bohuslav Rezek



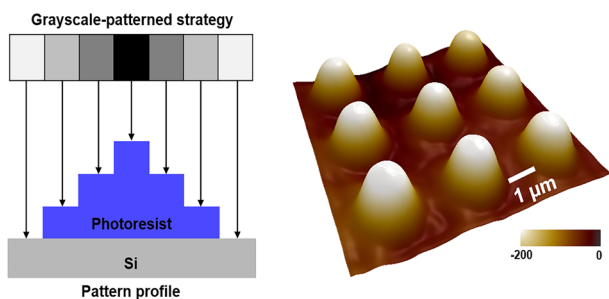
4415

### Copper(I) as a reducing agent for the synthesis of bimetallic PtCu catalytic nanoparticles

Adrián Fernández-Lodeiro,\* Javier Fernández Lodeiro, Noelia Losada-García, Silvia Nuti, José Luis Capelo-Martínez, Jose M. Palomo\* and Carlos Lodeiro\*



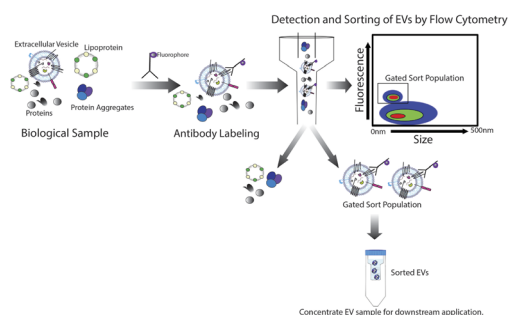
4424



### Spatial modulation of scalable nanostructures by combining maskless plasmonic lithography and grayscale-patterned strategy

Dandan Han, Tianchun Ye\* and Yayi Wei\*

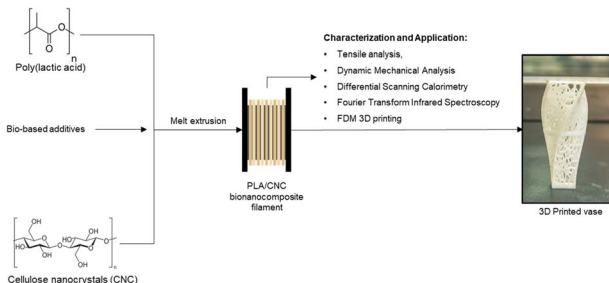
4435



### Separation and isolation of CD9-positive extracellular vesicles from plasma using flow cytometry

Karan Khanna, Nikki Salmond, Sina Halvaei, Andrew Johnson and Karla C. Williams\*

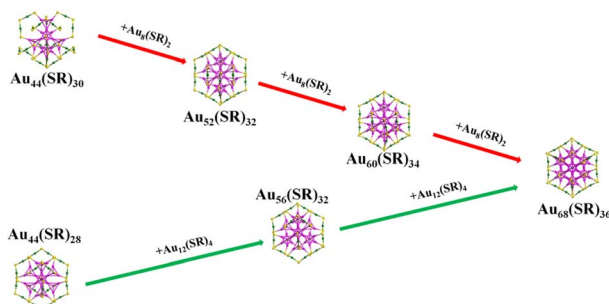
4447



### Preparation of cellulose nanocrystal (CNCs) reinforced poly(lactic acid) (PLA) bionanocomposites filaments using bio-based additives for 3D printing applications

Victor Chike Agbakoba,\* Percy Hlangothi, Jerome Andrew and Maya Jacob John

4464



### Structural predictions of three medium-sized thiolate-protected gold nanoclusters $\text{Au}_{44}(\text{SR})_{30}$ , $\text{Au}_{56}(\text{SR})_{32}$ , and $\text{Au}_{60}(\text{SR})_{34}$

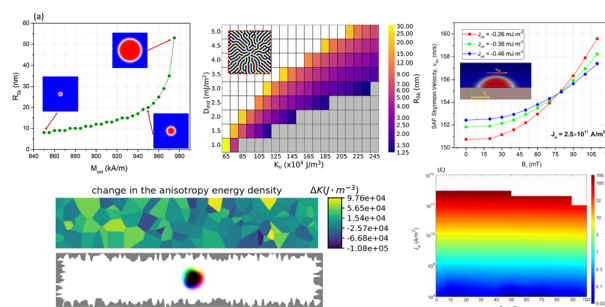
Wenhua Han, Gang Wang, Pengye Liu, Wenliang Li\* and Wen Wu Xu\*



4470

## Stabilization and adiabatic control of antiferromagnetically coupled skyrmions without the topological Hall effect

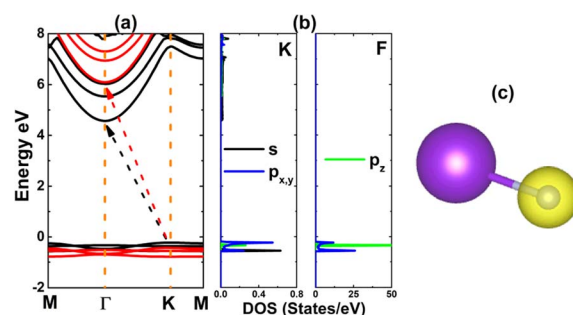
Rawana Yagan, Arash Mousavi Cheghabouri and Mehmet C. Onbasli\*



4480

## Functionalization of an ionic honeycomb KF monolayer *via* doping

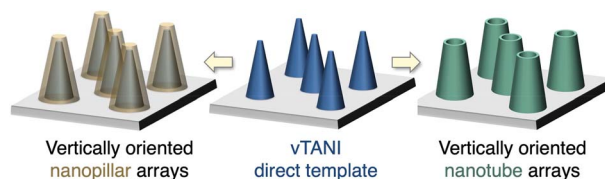
Huynh Anh Huy, Duy Khanh Nguyen, Chu Viet Ha, Dang Duc Toan, Hang Nga Nguyen, J. Guerrero Sanchez and D. M. Hoat\*



4489

## A new and versatile template towards vertically oriented nanopillars and nanotubes

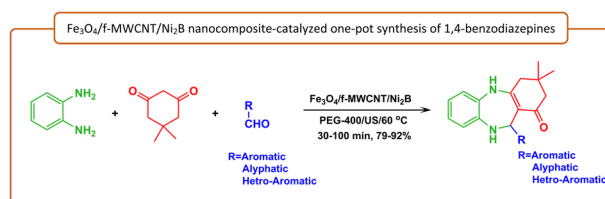
Bohao Xu, Di Wu, Ian M. Hill, Merissa Halim, Yves Rubin and Yue Wang\*



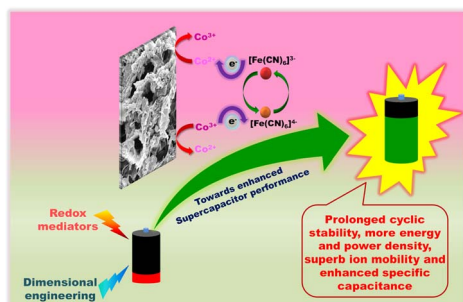
4499

## Immobilized nickel boride nanoparticles on magnetic functionalized multi-walled carbon nanotubes: a new nanocomposite for the efficient one-pot synthesis of 1,4-benzodiazepines

Farkhondeh Mohammad Aminzadeh and Behzad Zeynizadeh\*



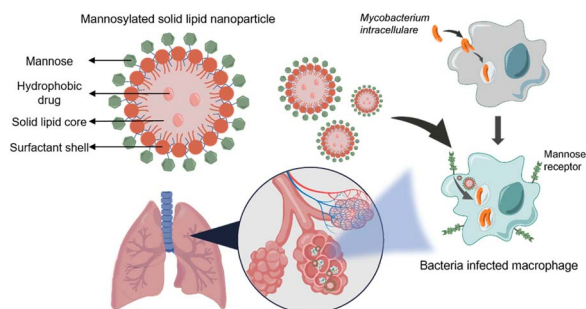
4521



### Redox mediator-enhanced charge storage in dimensionally tailored nanostructures towards flexible hybrid solid-state supercapacitors

Ritik Mohanty, Kaushik Parida\* and Kulamani Parida\*

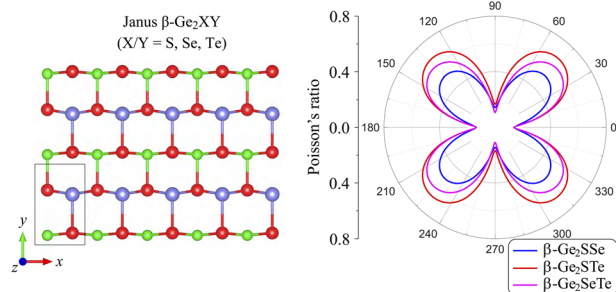
4536



### Targeted and efficient delivery of rifampicin to macrophages involved in non-tuberculous mycobacterial infection via mannosylated solid lipid nanoparticles

Jayoung Chae, Seung Hyun Kang, Jiwon Kim, Yonghyun Choi,\* Shin Hyuk Kang\* and Jonghoon Choi\*

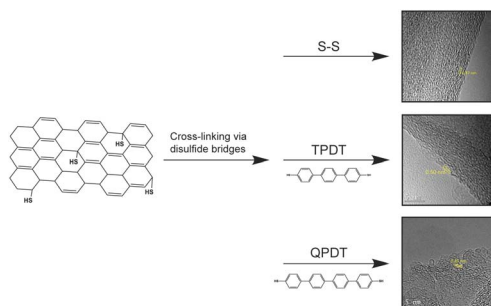
4546



### Novel two-dimensional Janus $\beta$ -Ge<sub>2</sub>XY (X/Y = S, Se, Te) structures: first-principles examinations

Nguyen Dinh Hien, D. V. Lu\* and Le C. Nhan

4553



### Controlling the spacing of the linked graphene oxide system with dithiol linkers under confinement

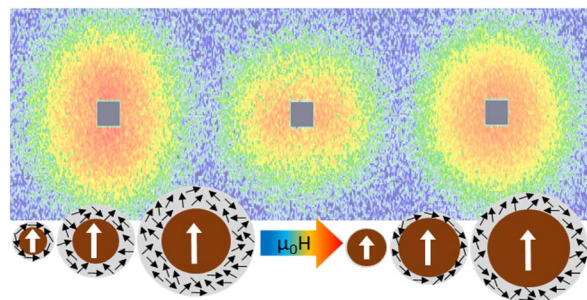
Nikita Sugak,\* Hien Pham, Abhaya Datye, Shomeek Mukhopadhyay, Haiyan Tan, Min Li and Lisa D. Pfeifferle



4563

### Size dependence of the surface spin disorder and surface anisotropy constant in ferrite nanoparticles

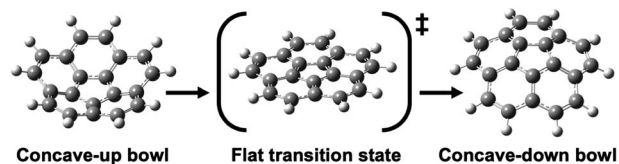
Marianna Gerina, Marco Sanna Angotzi, Valentina Mameli, Veronika Gajdošová, Daniel N. Rainer, Milan Dopita, Nina-Juliane Steinke, David Aurélio, Jana Vejpravová and Dominika Zákutná\*



4571

### Catalytic effect of graphene on the inversion of corannulene using a continuum approach with the Lennard-Jones potential

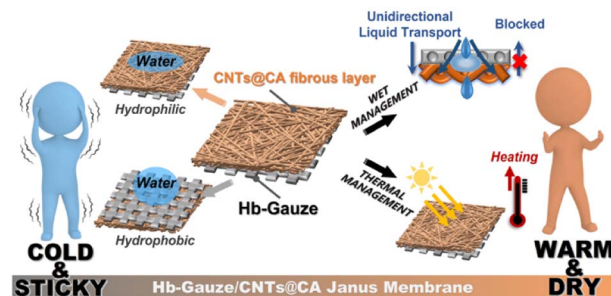
Panyada Sripaturad, Amir Karton,\* Kyle Stevens, Ngamta Thamwattana,\* Duangkamon Baowan and Barry J. Cox



4579

### A Janus membrane doped with carbon nanotubes for wet–thermal management

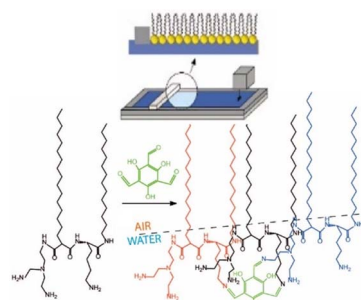
Boyang Tian, Miaomiao Hu, Yiwen Yang and Jing Wu\*



4589

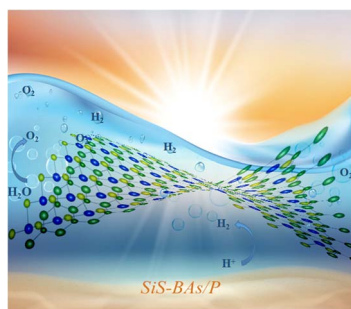
### Cross-linking reactions in Langmuir monolayers of specially designed aminolipids – a toolbox for the customized production of amphiphilic nanosheets

Cristina Stefaniu, Christian Wölk,\* Victoria M. Latza, Andrei Chumakov, Gerald Brezesinski and Emanuel Schneck\*



## PAPERS

4598

**First-principles study of BX–SiS (X = As, P) van der Waals heterostructures for enhanced photocatalytic performance**Sheraz Ahmad, H. U. Din,<sup>\*</sup> S. S. Ullah Sabir and B. Amin

## CORRECTION

4609

**Correction: Flavin-adenine-dinucleotide gold complex nanoparticles: chemical modeling design, physico-chemical assessment and perspectives in nanomedicine**Celia Arib, Nadia Bouchemal, Maria Barile, Didier Paleni, Nadia Djaker, Nathalie Dupont and Jolanda Spadavecchia<sup>\*</sup>