

# Nanoscale Advances

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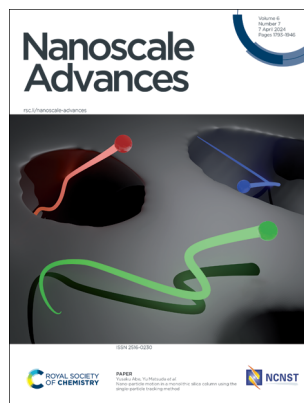
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## IN THIS ISSUE

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**Cover**  
See Devika S Manickam *et al.*, pp. 1853–1873. Image reproduced by permission of Devika S Manickam from *Nanoscale Adv.*, 2024, 6, 1853.



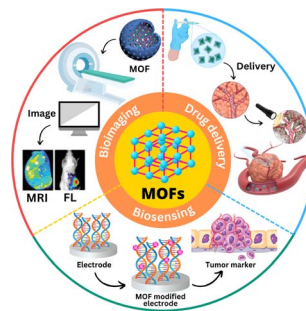
**Inside cover**  
See Yusaku Abe, Yu Matsuda *et al.*, pp. 1874–1879. Image reproduced by permission of Yusaku Abe from *Nanoscale Adv.*, 2024, 6, 1874.

## REVIEW

1800

### Recent progress and challenges of MOF-based nanocomposites in bioimaging, biosensing and biocarriers for drug delivery

Ngoan Thi Thao Nguyen, Thuy Thi Thanh Nguyen, Shengbo Ge, Rock Keey Liew, Duyen Thi Cam Nguyen\* and Thuan Van Tran\*



## MINIREVIEW

1822

### Detailed discussion on the structure of alloy nanoparticles synthesized via magnetron sputter deposition onto liquid poly(ethylene glycol)

Mai Thanh Nguyen,\* Pichaya Pattanasattayavong and Tetsu Yonezawa\*



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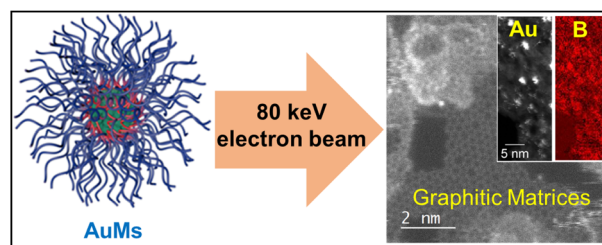
Fundamental questions  
Elemental answers

## COMMUNICATIONS

1837

**Experimental and theoretical evidence for unprecedented strong interactions of gold atoms with boron on boron/sulfur-doped carbon surfaces**

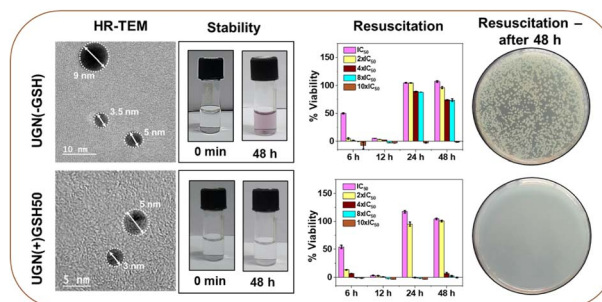
Samya Banerjee,\* Juliusz A. Wolny,\* Mohsen Danaie,\* Nicolas P. E. Barry, Yisong Han, Houari Amari, Richard Beanland, Volker Schünemann and Peter J. Sadler\*



1847

**Overcoming microbial resuscitation using stable ultrafine gold nanosystems**

Anindita Thakur, Pranay Amruth Maroju, Ramakrishnan Ganesan\* and Jayati Ray Dutta\*

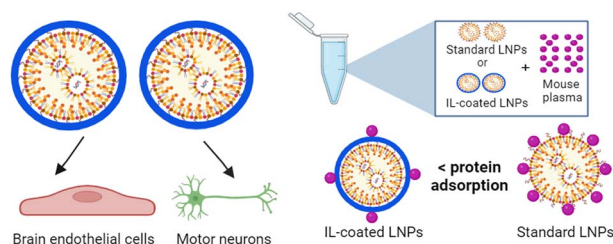


## PAPERS

1853

**Ionic liquid-coated lipid nanoparticles increase siRNA uptake into CNS targets**

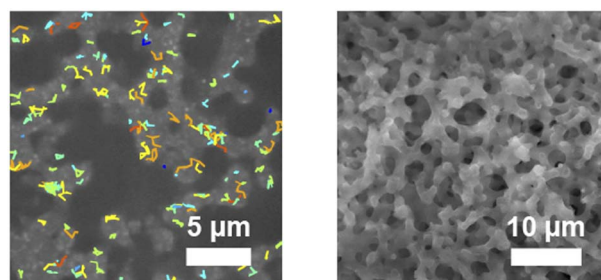
Purva Khare, Sara X. Edgecomb, Christine M. Hamadani, James F. Conway, Eden E. L. Tanner and Devika S Manickam\*



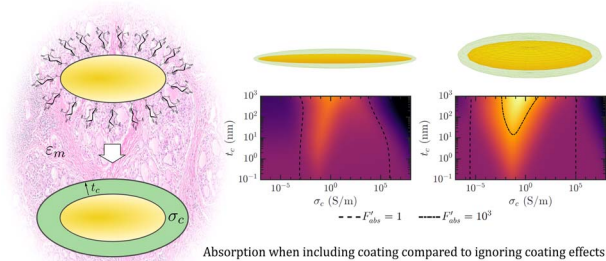
1874

**Nano-particle motion in a monolithic silica column using the single-particle tracking method**

Yusaku Abe,\* Naoki Tomioka and Yu Matsuda\*



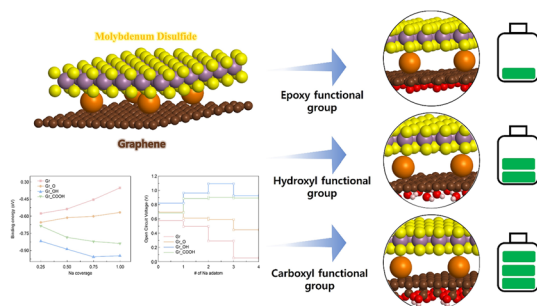
1880



### Radiofrequency absorption of coated ellipsoidal gold nanoparticles in human tissue

Brage Bøe Svendsen,<sup>\*</sup> Olle Hennert, Robert Themptander and Mariana Dalarsson

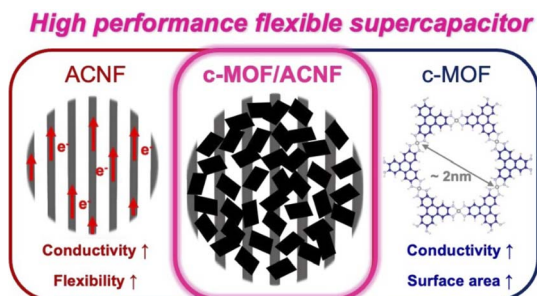
1892



### First-principles evaluation of transition metal dichalcogenide–graphene pairs functionalized with oxygen-containing groups for sodium-ion battery anodes

Wonmyung Choi, Sung Jun Hong, Hoejeong Jeong and Byungchan Han<sup>\*</sup>

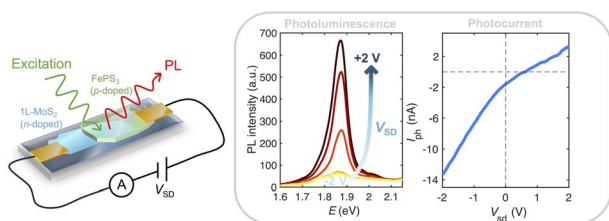
1900



### Rational design of conductive metal–organic frameworks and aligned carbon nanofibers for enhancing the performance of flexible supercapacitors

Dongyeon Kim, Tae Gwang Yun, Ji Hyun Lee, Ki Ro Yoon<sup>\*</sup> and Kyunghoon Kim<sup>\*</sup>

1909



### Tunable, multifunctional opto-electrical response in multilayer FePS<sub>3</sub>/single-layer MoS<sub>2</sub> van der Waals p–n heterojunctions

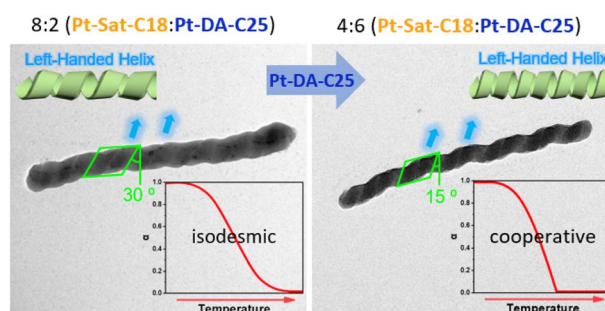
Maria Ramos, Marcos Gadea, Samuel Mañas-Valero, Carla Boix-Constant, Eudomar Henríquez-Guerra, María A. Díaz-García, Eugenio Coronado and M. Reyes Calvo<sup>\*</sup>



1917

### Controlling supramolecular copolymerization of alkynylplatinum(II) terpyridine complexes: from isodesmic to cooperative mechanisms

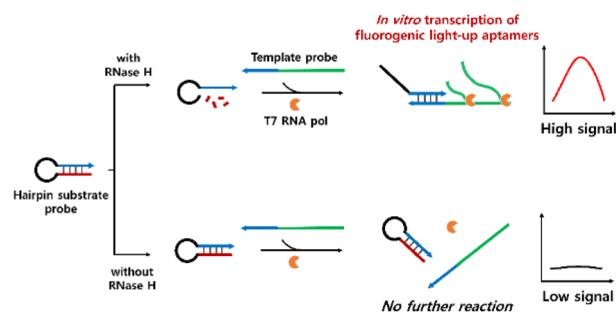
Sehee Kim, Minhye Kim, Seojeong Woo, Juyeong Kim, Sung Ho Jung\* and Jong Hwa Jung\*



1926

### An ultrasensitive label-free RNase H assay based on *in vitro* transcription of fluorogenic light-up aptamer

Jinhwan Lee, Hansol Kim, Yan Li, Seoyoung Lee and Hyun Gyu Park\*



1932

### A new neodymium complex on renewable magnetic biochar nanoparticles as an environmentally friendly, recyclable and efficient nanocatalyst in the homoselective synthesis of tetrazoles

Bahman Tahmasbi,\* Parisa Moradi and Mitra Darabi

