

# Nanoscale Advances

An open access journal publishing across the breadth of nanoscience and nanotechnology  
[rsc.li/nanoscale-advances](https://rsc.li/nanoscale-advances)

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

## IN THIS ISSUE

ISSN 2516-0230 CODEN NAADAI 6(6) 1575–1792 (2024)



### Cover

See Nadia Licciardello, Massimo Sgarzi, Gianarelio Cuniberti *et al.*, pp. 1653–1660. Image reproduced by permission of Massimo Sgarzi and Gianarelio Cuniberti from *Nanoscale Adv.*, 2024, 6, 1653.



### Inside cover

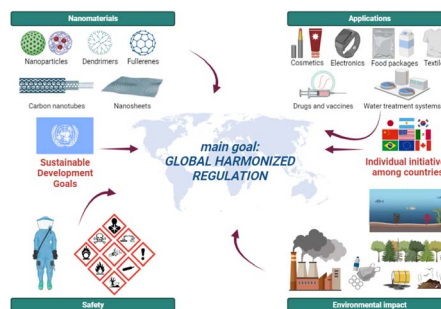
See Carmen Gonzalez *et al.*, pp. 1583–1610. Image reproduced by permission of Gabriela Navarro Tovar and Carmen Gonzalez from *Nanoscale Adv.*, 2024, 6, 1583.

## REVIEWS

1583

### Safe nanomaterials: from their use, application, and disposal to regulations

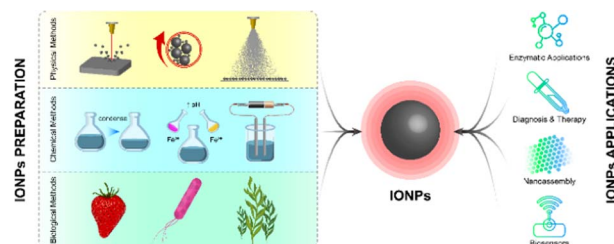
Jorge Antonio Chávez-Hernández, Aída Jimena Velarde-Salcedo, Gabriela Navarro-Tovar and Carmen Gonzalez\*



1611

### Magnetic iron oxide-based nanozymes: from synthesis to application

Asma Ghazzy,\* Hamdi Nsairat, Rana Said, Obada A. Sibai, Aseel AbuRuman, Alaa S. Shraim and Afnan Al hunaiti



# RSC Applied Interfaces

GOLD  
OPEN  
ACCESS

Interfacial and surface research  
with an applied focus

Interdisciplinary and open access

[rsc.li/RSCApplInter](https://rsc.li/RSCApplInter)

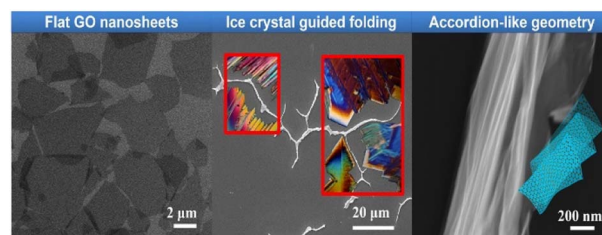
Fundamental questions  
Elemental answers

## COMMUNICATIONS

1643

## Ice crystal guided folding of graphene oxides in a confined space: a facile approach to 1D functional graphene structures

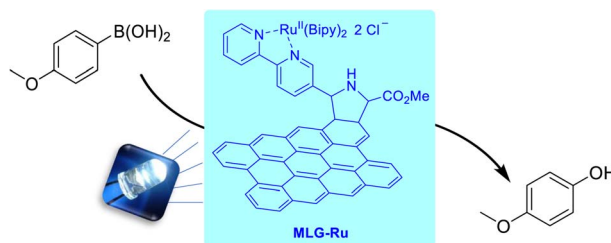
Wubo Wan, Zongbin Zhao, Shaohong Liu, Xiaojuan Hao,\* Timothy C. Hughes\* and Jieshan Qiu\*



1648

## Preparation of a ruthenium complex covalently bonded to multilayer graphene and its evaluation as a photocatalyst

Lesly V. Rodríguez-Flórez, María de Gracia Retamosa, Miriam Navlani-García, Diego Cazorla-Amorós,\* Carmen Nájera, Miguel Yus and José M. Sansano\*

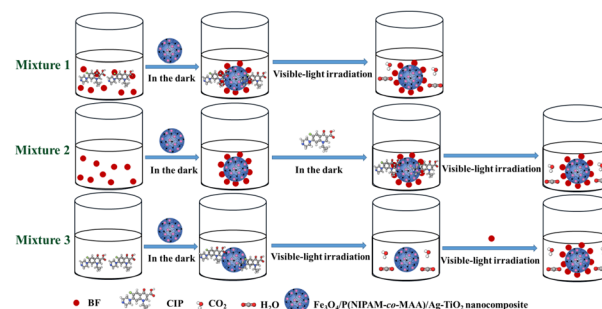


## PAPERS

1653

## Multifunctional polymer-based nanocomposites for synergistic adsorption and photocatalytic degradation of mixed pollutants in water

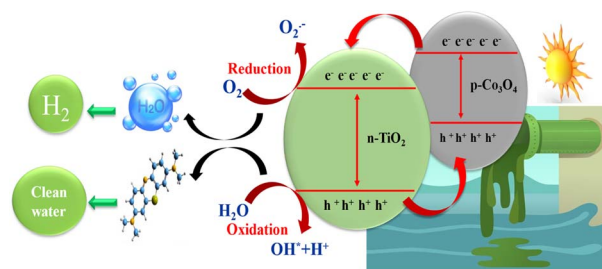
Jiao Wang, Nadia Licciardello,\* Massimo Sgarzi\* and Gianarelio Cuniberti\*



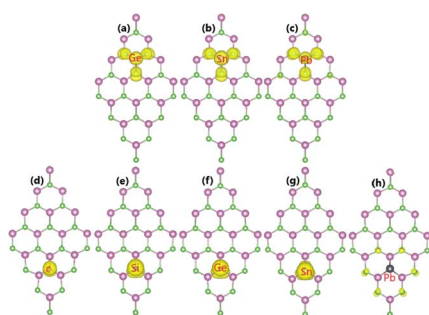
1661

Enhanced sunlight-driven catalysis for hydrogen generation and dye remediation using synergistic p-Co<sub>3</sub>O<sub>4</sub>/n-TiO<sub>2</sub> nanocomposites

Sandhya S. Gadge, Ratna Chauhan, Dattatray J. Late, Indra Jeet Chaudhary, Muthupandian Ashokkumar and Suresh Gosavi\*



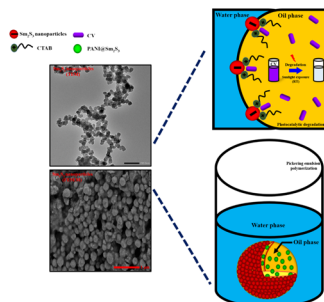
1678



### n/p-Doping in a buckled honeycomb InAs monolayer using IVA-group impurities

D. M. Hoat\* and J. Guerrero-Sanchez

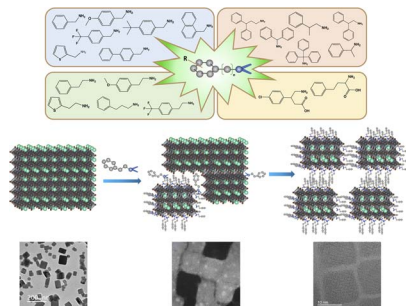
1688



### A deeper insight into the evaluation of water-in-oil microemulsion templated samarium sulfide nanospheres: exploring its role in pickering emulsion formulation for photocatalytic dye degradation and synthesis of PANI@Sm<sub>2</sub>S<sub>3</sub> nanocomposites

Sk Mehebab Rahaman, Nargis Khatun, Prashanta Pal, Trishna Mandal, Arnab Patra, Mahasweta Nandi and Bidyut Saha\*

1704



### Influence of arylalkyl amines on the formation of hybrid CsPbBr<sub>3</sub> nanocrystals *via* a modified LARP method

Ernest Ruby, Hugo Levy-Falk, Gaëlle Trippé-Allard, Frédéric Fossard, Maxime Vallet, Nicolas Guiblin, Jean-Sébastien Lauret, Emmanuelle Deleporte and Cédric R. Mayer\*

1720



### *In situ* growth of N-doped carbon nanotubes from the products of graphitic carbon nitride etching by nickel nanoparticles

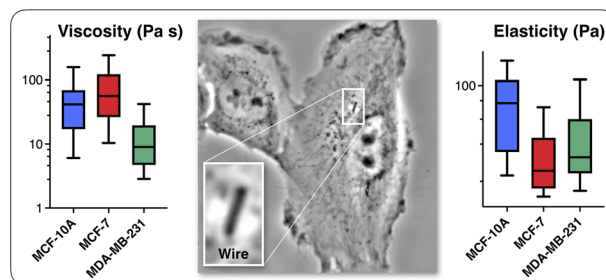
Mariusz Pietrowski,\* Emilia Alwin, Michał Zieliński, Sabine Szunerits, Agata Suchora and Robert Wojcieszak\*



1727

### Cytoplasmic viscosity is a potential biomarker for metastatic breast cancer cells

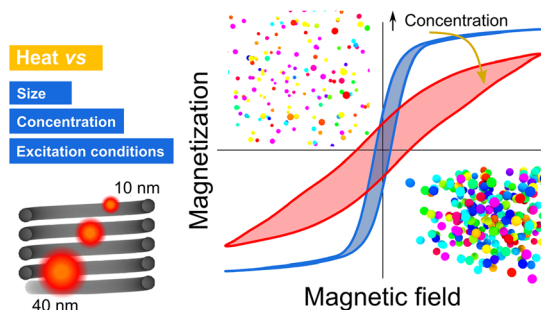
Marie Dessard, Jean-Baptiste Manneville and Jean-François Berret\*



1739

### Influence of size, volume concentration and aggregation state on magnetic nanoparticle hyperthermia properties versus excitation conditions

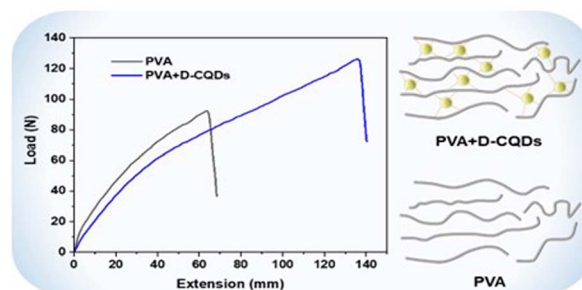
Riccardo Ferrero,\* Marta Vicentini and Alessandra Manzin\*



1750

### Reinforcement using undoped carbon quantum dots (CQDs) with a partially carbonized structure doubles the toughness of PVA membranes

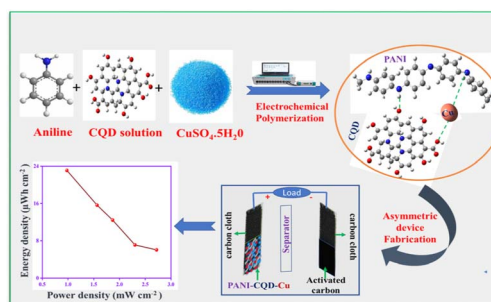
Zeeshan Latif, Hasan B. Albargi, Zubair Khaliq, Kinza Shahid, Usama Khalid, Muhammad Bilal Qadir,\* Mumtaz Ali,\* Salman Nosheer Arshad, Ali S. Alkorbi and Mohammed Jalalah



1765

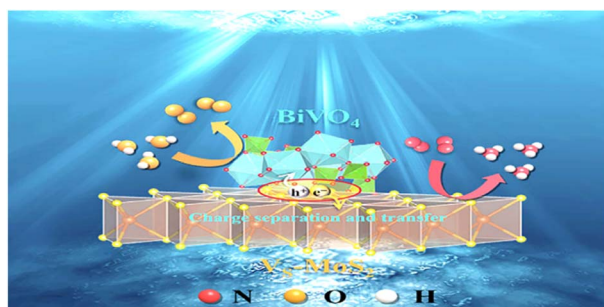
### Construction of a binder-free PANI-CQD-Cu electrode via an electrochemical method for flexible supercapacitor applications

Esakkimuthu Shanmugasundaram, Vigneshkumar Ganesan, Vimalasruthi Narayanan, Kannan Vellaisamy, Na'il Saleh\* and Stalin Thambusamy\*



## PAPERS

1781



### Construction of a BiVO<sub>4</sub>/V<sub>5</sub>-MoS<sub>2</sub> S-scheme heterojunction for efficient photocatalytic nitrogen fixation

Han-Ying Luo, Zhao-Lei Liu, Meng-Ran Zhang, Yan-Fei Mu\* and Min Zhang\*

## CORRECTION

1790

### Correction: Mechanistic insights into Ag<sup>+</sup> induced size-growth from [Au<sub>6</sub>(DPPP)<sub>4</sub>]<sup>2+</sup> to [Au<sub>7</sub>(DPPP)<sub>4</sub>]<sup>2+</sup> clusters

Ying Lv, Xiaohang Wu, Shuping He and Haizhu Yu\*

