

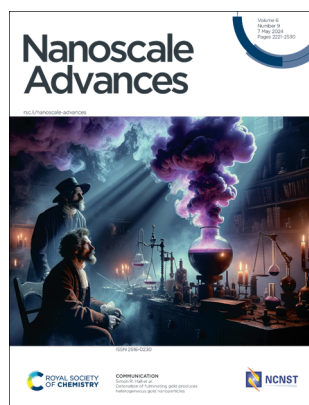
# Nanoscale Advances

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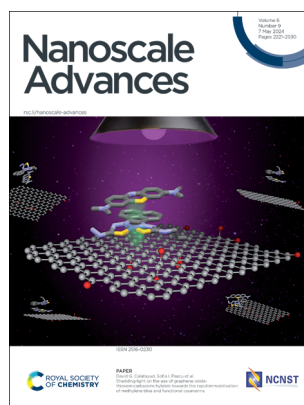
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ISSN 2516-0230 CODEN NAADAI 6(9) 2221–2530 (2024)



### Cover

See Simon R. Hall *et al.*, pp. 2231–2233. Image reproduced by permission of Jan Maurycy Uszko from *Nanoscale Adv.*, 2024, 6, 2231.



### Inside cover

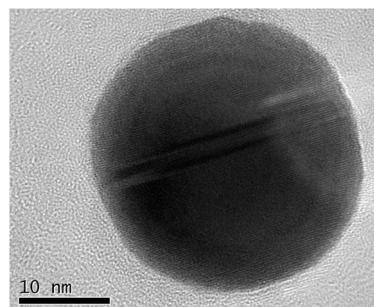
See David G. Calatayud, Sofia I. Pascu *et al.*, pp. 2287–2305. Image reproduced by permission of David G. Calatayud and Ana Castellanos-Aliaga from *Nanoscale Adv.*, 2024, 6, 2287. Ana Castellanos-Aliaga from Instituto de Ceramica y Vidrio - CSIC is acknowledged as coauthor of the cover image.

## COMMUNICATION

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### Detonation of fulminating gold produces heterogeneous gold nanoparticles

Jan Maurycy Uszko, Stephen J. Eichhorn, Avinash J. Patil and Simon R. Hall\*

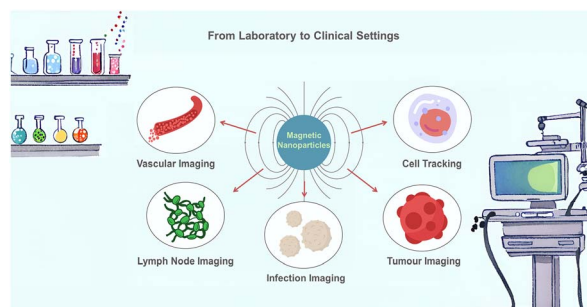


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### Advancing MRI with magnetic nanoparticles: a comprehensive review of translational research and clinical trials

Radu Lapusan, Raluca Borlan and Monica Focsan\*



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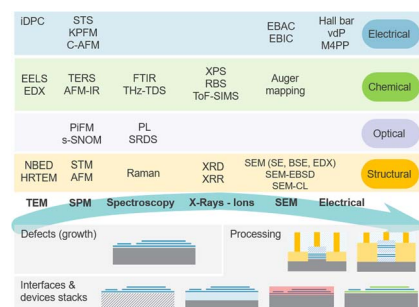
Fundamental questions  
Elemental answers

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## Metrology for 2D materials: a perspective review from the international roadmap for devices and systems

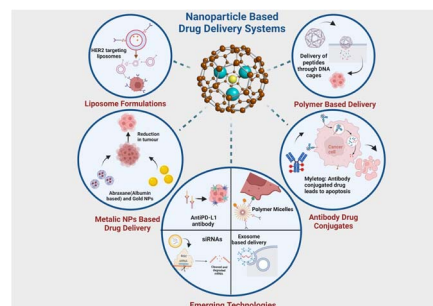
Umberto Celano,<sup>\*</sup> Daniel Schmidt, Carlos Beitia, George Orji, Albert V. Davydov and Yaw Obeng



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## Cutting-edge approaches for targeted drug delivery in breast cancer: beyond conventional therapies

Ramesh Chaudhari, Vishva Patel and Ashutosh Kumar<sup>\*</sup>

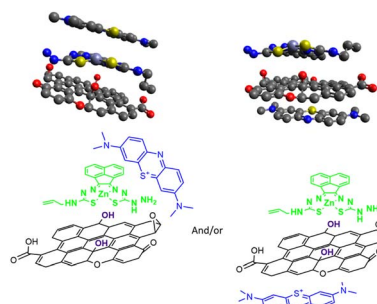


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## Shedding light on the use of graphene oxide-thiosemicarbazone hybrids towards the rapid immobilisation of methylene blue and functional coumarins

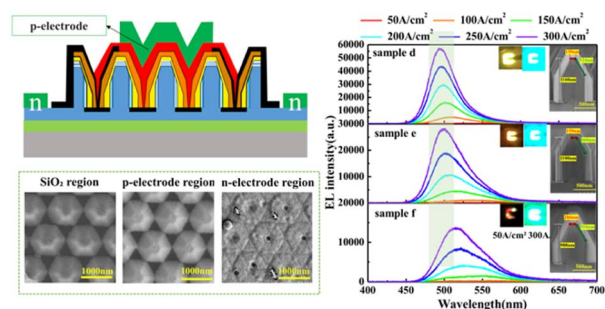
Danielle Bradley, Sophia Sarpaki, Vincenzo Mirabello, Simone Giuseppe Giuffrida, Gabriele I. Kociok-Köhn, David G. Calatayud<sup>\*</sup> and Sofia I. Pascu<sup>\*</sup>



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## Investigation of emission plane control in GaInN/GaN multiple-quantum shells for efficient nanowire-based LEDs

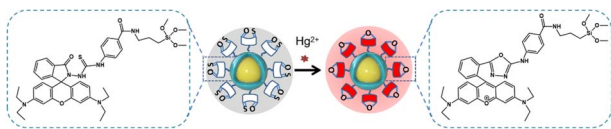
Soma Inaba, Weifang Lu,<sup>\*</sup> Ayaka Shima, Shiori Ii, Mizuki Takahashi, Yuki Yamanaka, Yuta Hattori, Kosei Kubota, Kai Huang, Motoaki Iwaya, Tetsuya Takeuchi and Satoshi Kamiyama





## PAPERS

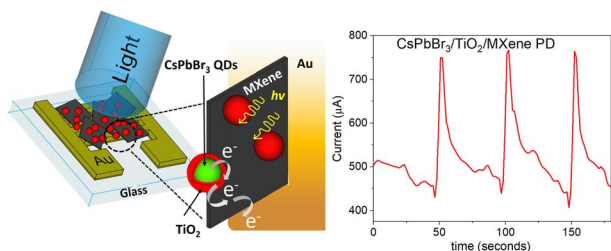
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**"Turn-on" and pinhole-free ultrathin core-shell Au@SiO<sub>2</sub> nanoparticle-based metal-enhanced fluorescent (MEF) chemodosimeter for Hg<sup>2+</sup>**

Ying Cui, Shanji Fan, Yunran Zhai, Yingjie Liu, Junhua Li, Jiawen Hu\* and Lijia Wang\*

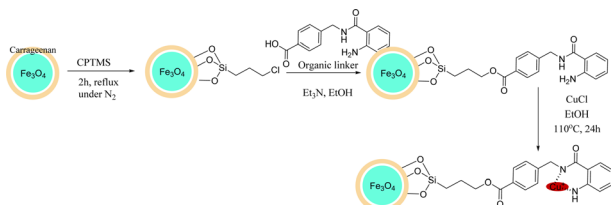
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**Stability and photocurrent enhancement of photodetectors by using core/shell structured CsPbBr<sub>3</sub>/TiO<sub>2</sub> quantum dots and 2D materials**

Chathurika Maduwanthi, Chao-An Jong, Waleed S. Mohammed and Shu-Han Hsu\*

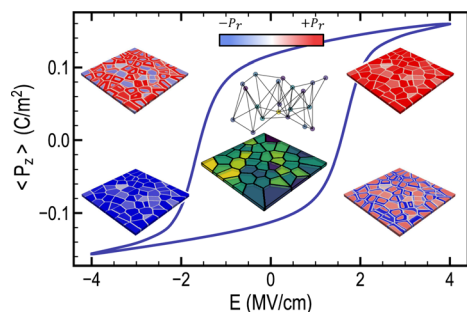
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**Copper supported modified magnetic carrageenan as a bio-based catalyst for the synthesis of novel scaffolds bearing the 1,2,3-triazole unit through the click reaction**

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**Ultrafast and accurate prediction of polycrystalline hafnium oxide phase-field ferroelectric hysteresis using graph neural networks**

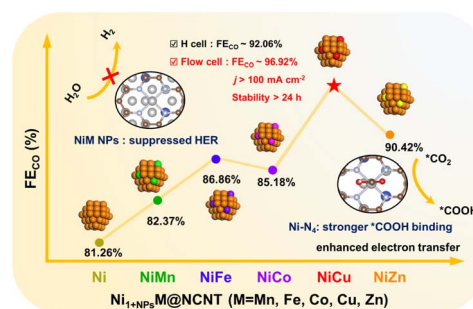
Alhada-Lahbabi Kevin\*, Deleruyelle Damien and Gautier Brice



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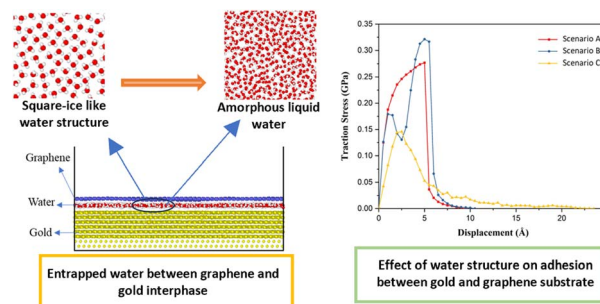
Yingjie Liu, Zhaohui Wu, Sha Bai, Tianyang Shen, Qian Li, Guihao Liu, Xiaoliang Sun, Yihang Hu, Ziheng Song, Jinfeng Chu\* and Yu-Fei Song\*



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## Molecular dynamics simulation-based study to analyse the properties of entrapped water between gold and graphene 2D interfaces

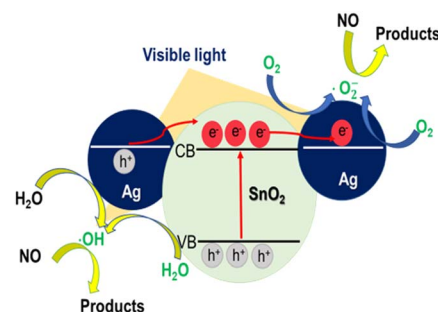
Shashank Mishra,\* Fengyuan Liu, Dhayalan Shakthivel, Beena Rai and Vihar Georgiev



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## Visible light photocatalytic NO<sub>x</sub> removal with suppressed poisonous NO<sub>2</sub> byproduct generation over simply synthesized triangular silver nanoparticles coupled with tin dioxide

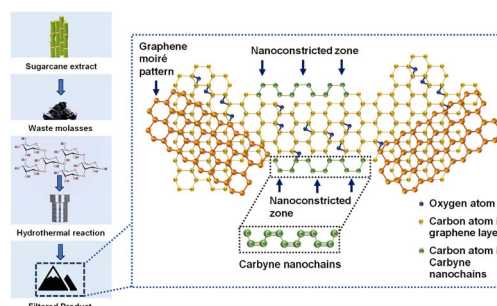
Viet Van Pham,\* Thang Quoc Nguyen, Hai Viet Le and Thi Minh Cao



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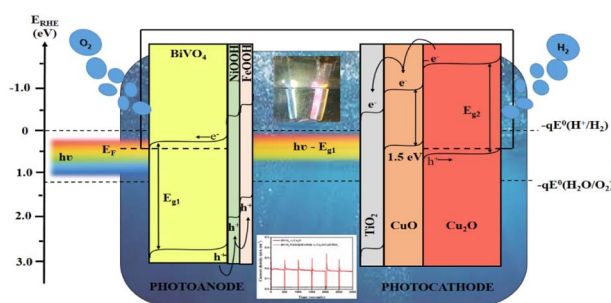
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Sampathkumar Jeevanandham, Dakshi Kochhar, Omnarayan Agrawal, Siddhartha Pahari, Chirantan Kar, Tamal Goswami, Indra Sulania and Monalisa Mukherjee\*



## PAPERS

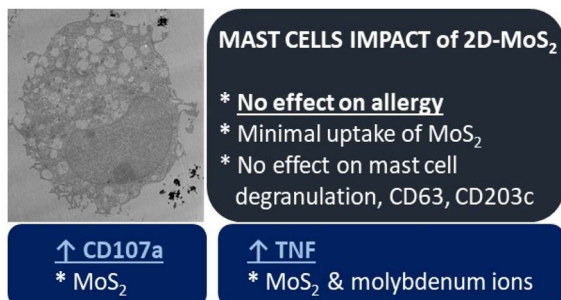
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### Photoelectrochemical performance of a nanostructured BiVO<sub>4</sub>/NiOOH/FeOOH–Cu<sub>2</sub>O/CuO/TiO<sub>2</sub> tandem cell for unassisted solar water splitting

S. R. Sitaaraman, A. Nirmala Grace, Jiefang Zhu and Raja Sellappan\*

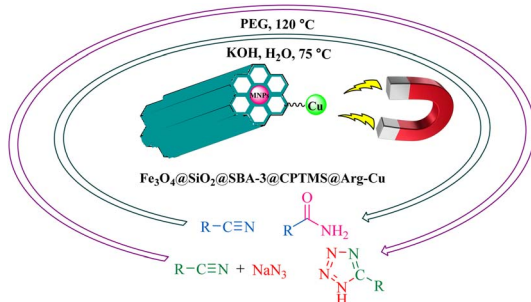
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### Cytotoxicity assessment of exfoliated MoS<sub>2</sub> using primary human mast cells and the progenitor cell-derived mast cell line LAD2

Hazel Lin, Antonio Esau del Rio Castillo, Viviana Jehová González, Francesco Bonaccorso, Ester Vázquez, Bengt Fadeel and Alberto Bianco\*

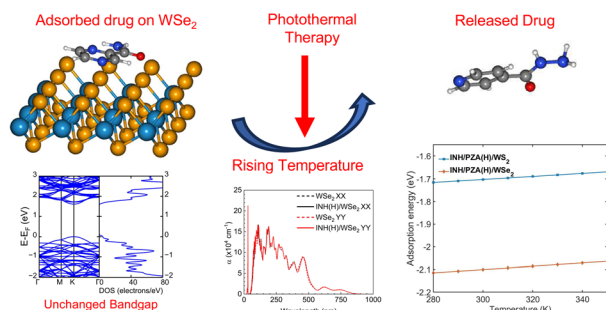
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### Fe<sub>3</sub>O<sub>4</sub>@SiO<sub>2</sub>@SBA-3@CPTMS@Arg-Cu: preparation, characterization, and catalytic performance in the conversion of nitriles to amides and the synthesis of 5-substituted 1H-tetrazoles

Zahra Heidarneshad, Arash Ghorbani-Choghamarani\* and Zahra Taherinia

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### First-principles calculations on monolayer WX<sub>2</sub> (X = S, Se) as an effective drug delivery carrier for anti-tuberculosis drugs

Khaled Mahmud, Taki Yashir and Ahmed Zubair\*

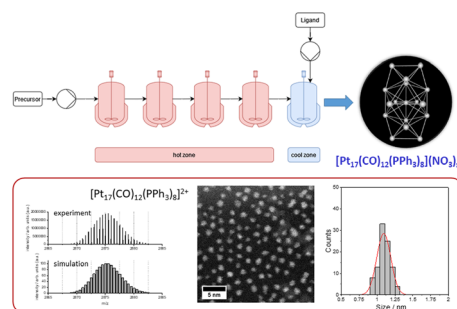


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**Continuous flow synthesis of atom-precise platinum clusters**

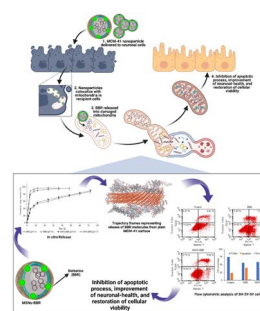
Christian Schmitt, Nicola Da Roit, Marco Neumaier, Carina B. Maliakkal, Di Wang, Thilo Henrich, Christian Kübel, Manfred Kappes and Silke Behrens\*



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***In vitro* profiling and molecular dynamics simulation studies of berberine loaded MCM-41 mesoporous silica nanoparticles to prevent neuronal apoptosis**

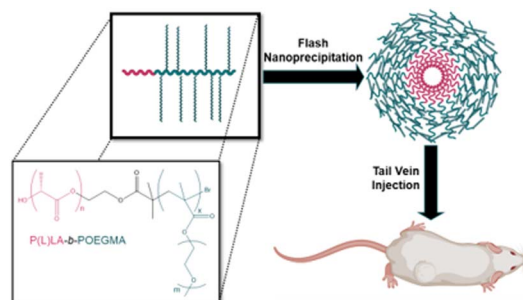
Anurag Kumar Singh, Snigdha Singh, Tarun Minocha, Sanjeev Kumar Yadav, Reema Narayan, Usha Yogendra Nayak, Santosh Kumar Singh\* and Rajendra Awasthi\*



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**The effect of comb length on the *in vitro* and *in vivo* properties of self-assembled poly(oligoethylene glycol methacrylate)-based block copolymer nanoparticles**

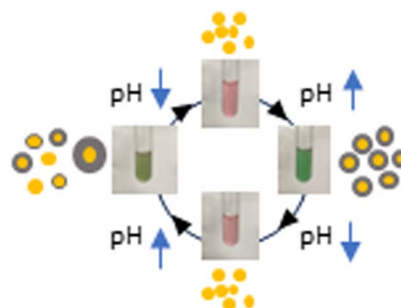
Andrew Singh, Andrew Lofts, Ramya Krishnan, Matthew Campea, Lan Chen, Yonghong Wan and Todd Hoare\*



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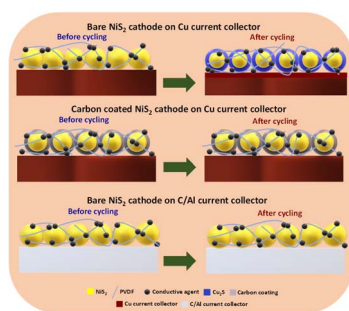
**Gold–copper oxide core–shell plasmonic nanoparticles: the effect of pH on shell stability and mechanistic insights into shell formation**

Stephen F. Bartolucci, Asher C. Leff and Joshua A. Maurer



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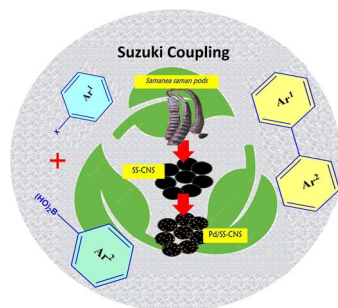
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### Overcoming copper-induced conversion reactions in nickel disulphide anodes for sodium-ion batteries

Milan K. Sadan,<sup>\*</sup> Taehong Kim, Anupriya K. Haridas, Hooam Yu, Denis Cumming, Jou-Hyeon Ahn and Hyo-Jun Ahn<sup>\*</sup>

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### Sustainable carbonaceous nanomaterial supported palladium as an efficient ligand-free heterogeneous catalyst for Suzuki–Miyaura coupling

Apoorva Shetty, Dhanya Sunil, Thitima Rujiralai, Sanjeev P. Maradur, Abdullah N. Alodhayb and Gurumurthy Hegde<sup>\*</sup>

## CORRECTION

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### Correction: Excitons in metal halide perovskite nanoplatelets: an effective mass description of polaronic, dielectric and quantum confinement effects

Jose L. Movilla, Josep Planelles and Juan I. Climente<sup>\*</sup>

