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

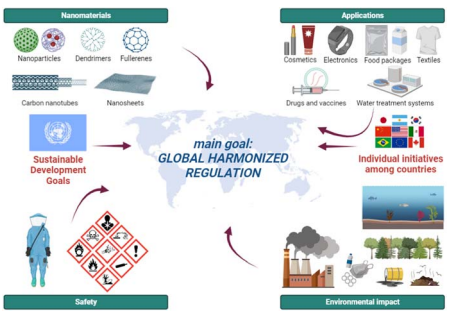
Inside cover
See Carmen Gonzalez *et al.*, pp. 1583–1610. Image reproduced by permission of Gabriela Navarro Tovar and Carmen Gonzalez from *Nanoscale Adv.*, 2024, **6**, 1583.

REVIEWS

1583

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

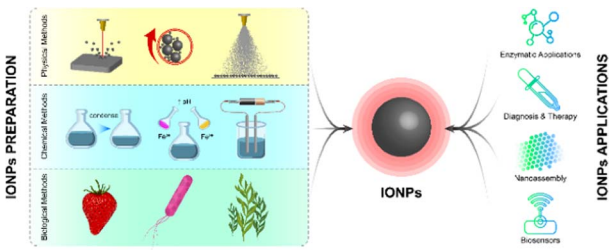
Jorge Antonio Chávez-Hernández, Aída Jimena Velarde-Salcedo, Gabriela Navarro-Tovar and Carmen Gonzalez*



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



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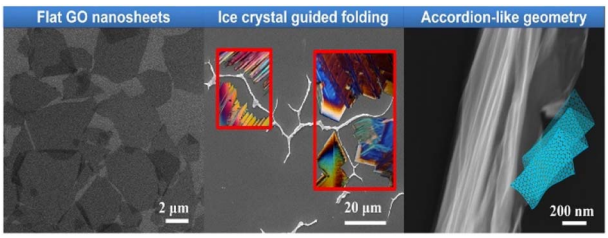
COMMUNICATIONS

1643

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

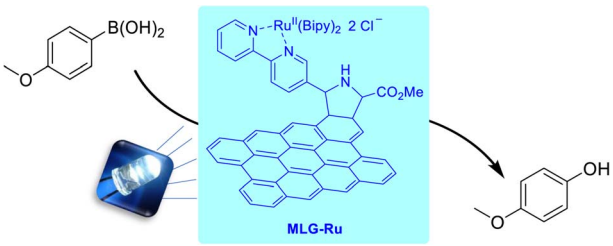
Wubo Wan, Zongbin Zhao, Shaohong Liu, Xiaojuan Hao,* Timothy C. Hughes* and Jieshan Qiu*



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*

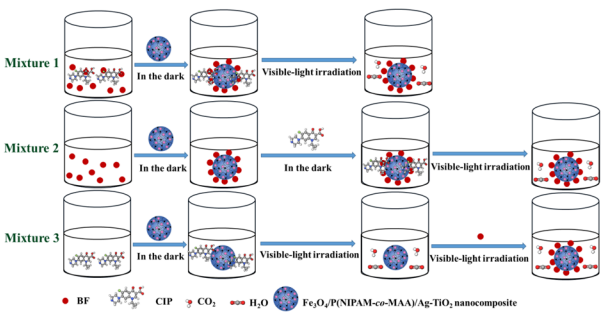


PAPERS

1653

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

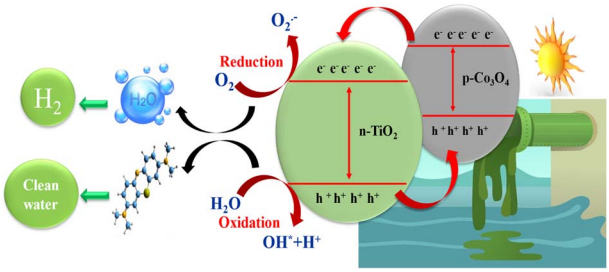
Jiao Wang, Nadia Licciardello,* Massimo Sgarzi* and Gianaurelio Cuniberti*



1661

Enhanced sunlight-driven catalysis for hydrogen generation and dye remediation using synergistic p-Co_3O_4/n-TiO_2 nanocomposites

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



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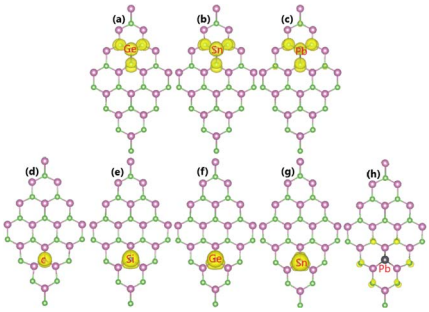
1678



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

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

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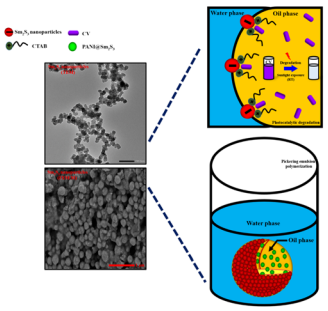
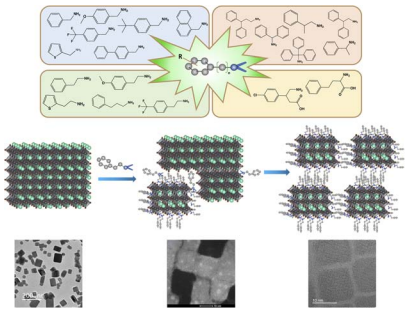


A deeper insight into the evaluation of water-in-oil amicroemulsion templated samarium sulfide nanospheres: exploring its role in pickering emulsion formulation for photocatalytic dye degradation and synthesis of PANI@Sm_2S_3 nanocomposites

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

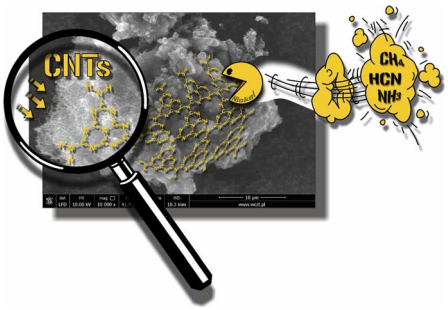
1704



Influence of arylalkyl amines on the formation of hybrid $CsPbBr_3$ 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*

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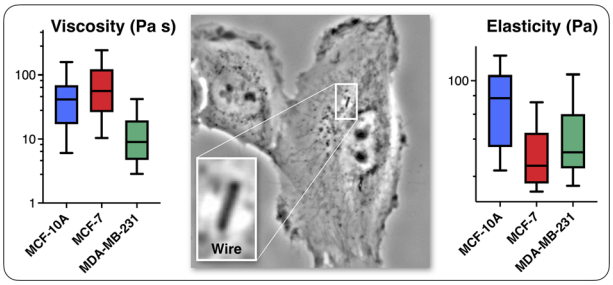
Cytoplasmic viscosity is a potential biomarker for metastatic breast cancer cells

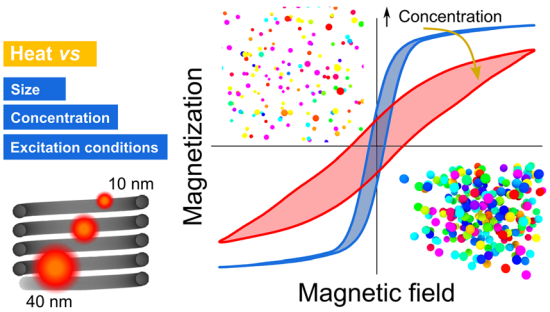
Marie Dessard, Jean-Baptiste Manneville and Jean-François Berret*



1739

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

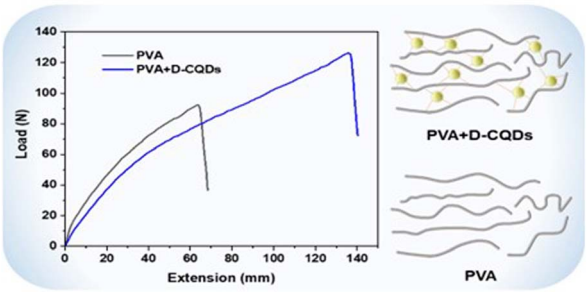
Riccardo Ferrero,* Marta Vicentini and Alessandra Manzin*



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 Noshear Arshad, Ali S. Alkorbi and Mohammed Jalalah



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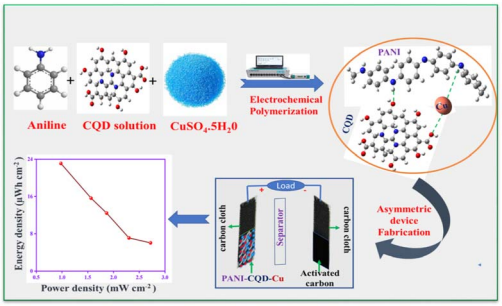
Construction of a binder-free PANI-CQD-Cu electrode *via* an electrochemical method for flexible supercapacitor applications

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



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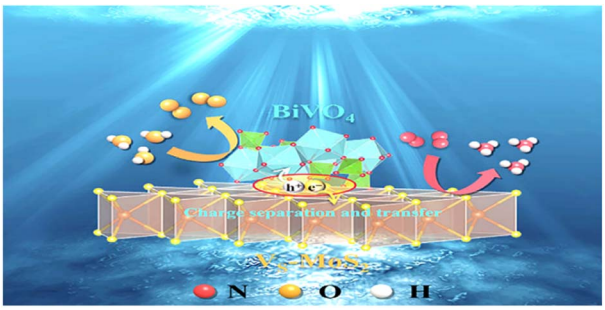
1781



Construction of a $BiVO_4/V_S$-MoS_2 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^+ induced size-growth from $[Au_6(DPPP)_4]^{2+}$ to $[Au_7(DPPP)_4]^{2+}$ clusters

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

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