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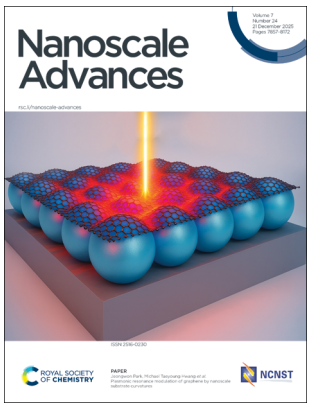


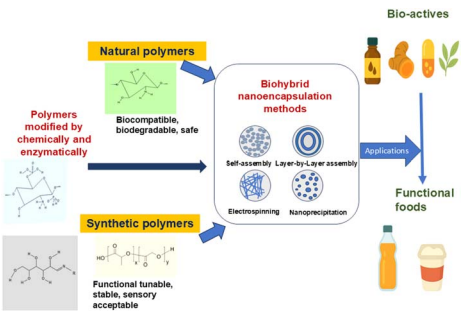
Cover
See Jeongwon Park, Michael Taeyoung Hwang *et al.*, pp. 7899–7912. Image reproduced by permission of Jeongwon Park from *Nanoscale Adv.*, 2025, **7**, 7899. Cover image generated using Blender and Google Gemini.

REVIEW

7867

Hybrid nanoencapsulation systems: integrating natural polymers with synthetic nanomaterials for enhanced delivery of bioactive compounds in functional foods

Maheshika Sethunga, S. C. Rangani, Imalka Munaweera* and K. K. D. S. Ranaweera

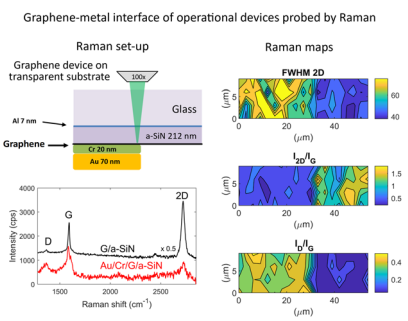


COMMUNICATION

7891

Direct access to the graphene–metal interface using Raman spectroscopy to study the origin of contact resistance in operational devices

Alessandro Kovtun,* Leonardo Martini and Piera Maccagnani*



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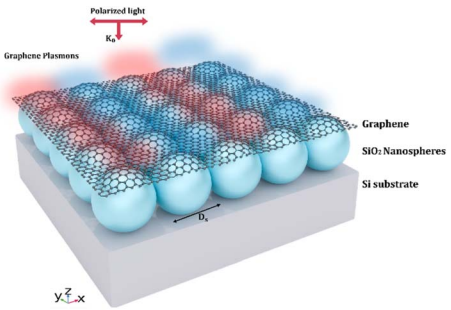
PAPERS

7899

Plasmonic resonance modulation of graphene by nanoscale substrate curvatures

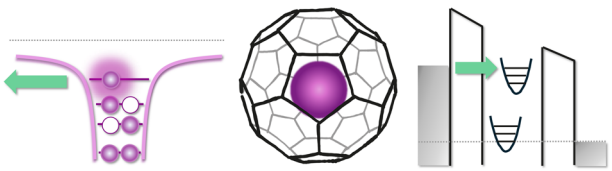
Vahid Faramarzi, Sareh Vatani, Mohsen Heidari, Jeongwon Park* and Michael Taeyoung Hwang*



7913

Charge transfer dynamics in noble gas endofullerenes: intra- and extramolecular tunnelling

Ali Sufyan, Tyler James, Connor Fields, Shabnam Naseri, Filipe Junqueira, Sofia Alonso-Perez, Sally Bloodworth, Gabriela Hoffman, Mark C. Walkey, Elizabeth S. Marsden, Richard J. Whitby, Yitao Wang, David A. Duncan, Tien-Lin Lee, James N. O'Shea, J. Andreas Larsson, Brian Kiraly and Philip Moriarty*



7930

Greening of coffee waste through its transformation into clean and structurally stable activated carbon for energy storage applications

Zain Ul Abideen,* Rasoul Khayyam Nekouei, Mohsen Hajian-Foroushani, Samane Maroufi and Veena Sahajwalla

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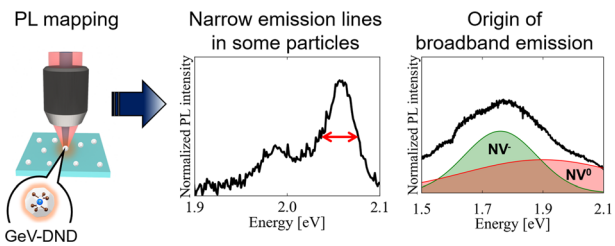
Micro-photoluminescence spectroscopy of detonation nanodiamonds containing germanium-vacancy centres

Yoshiki Saito, Yushi Okuda, Yoshihiro Tomoi, Taiki Shimamura, Takuya Matsuda, Yuto Makino and Masaaki Ashida*



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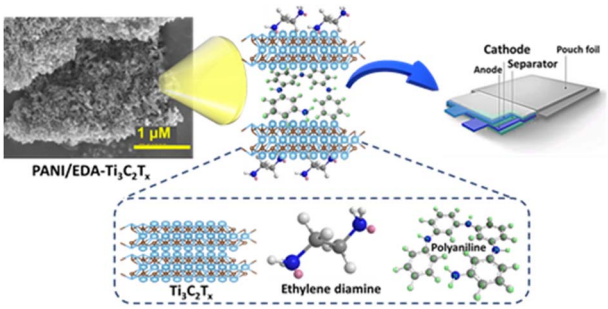
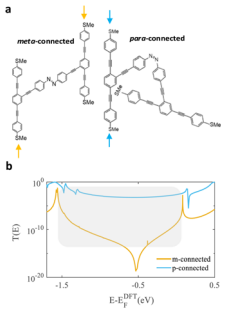


Architecturally robust design of ethylenediamine-assisted polyaniline/MXene nanohybrids for symmetric pouch-cell supercapacitors

Sithara Radhakrishnan, Subhashree Mohapatra, P. S. Anagha, Akshaya Shibu, K. Namsheer, Manasi Pathak, Sang Mun Jeong and Chandra Sekhar Rout*

7958



Light-driven molecular switching achieves 6-order magnitude conductance change in OPE dimers

Asma Alajmi, Bashayer Alanazi, Karimah Alresheedi, Kholood Alharbi, William D. J. Tremlett, Nicholas J. Long, Colin Lambert* and Ali Ismael*

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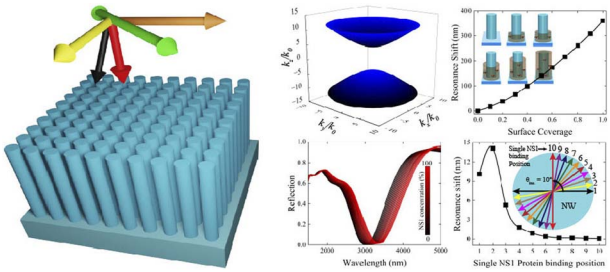
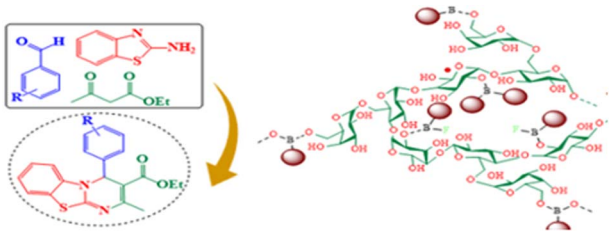


Silicon nanowire based angle robust ultrasensitive hyperbolic metamaterial biosensor

Badhan Golder, Zahidul Salman, Rony Das and Arif Ahammad*

7976



Preparation and characterization of nano guar gum/BF_3/Fe_3O_4 as a novel bio-based Lewis acid catalyst for the one-pot green synthesis of pyrimido benzothiazoles under solvent-free conditions

Motahare Hajihasani Bafghi, Abdolhamid Bamoniri* and Bi Bi Fatemeh Mirjalili

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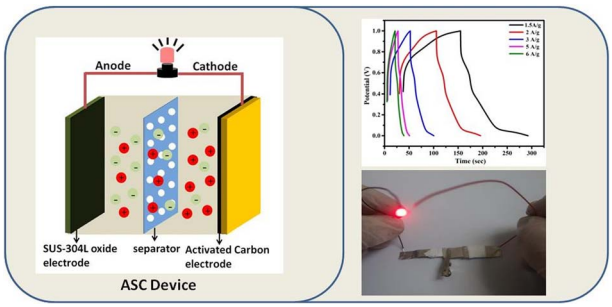
PAPERS

7987

A novel anodic nanostructured stainless steel-304L oxide as an emerging electrode material for high energy density asymmetric supercapacitors: experimental and DFT insights

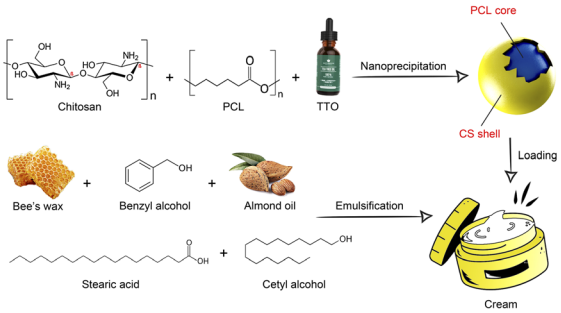
Jawad Ahmad, Muhammad Danish, Ghafar Ali,* Maaz Khan, Shahzad Anwar, Gul Rahman, Mashkoor Ahmad, Yi Xie, Seunguk Cheon, Sung Oh Cho* and Imran Shakir



8001

Polycaprolactone/chitosan core–shell nanoparticles for the acceleration of second-degree burn healing in CD1 mice

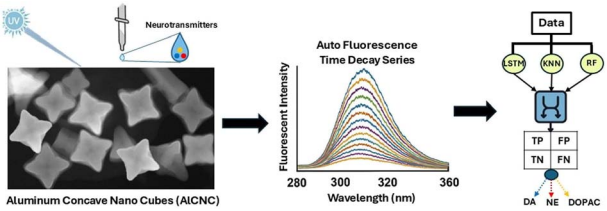
Alaa H. Saleh, Abeer M. Badr,* Zeinab A. Muhammad, Magdi E. A. Zaki, Asmaa Abdel Kader, Noha A. Mahana and Ahmed S. Abo Dena*



8013

A novel approach for classifying monoamine neurotransmitters by applying machine learning on UV plasmonic-engineered auto fluorescence time decay series (AFTDS)

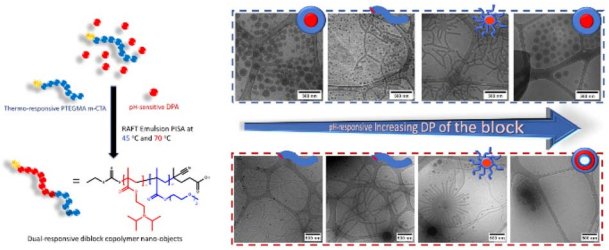
Mohammad Mohammadi, Sima Najafzadehkhoei, George G. Vega Yon and Yunshan Wang*



8023

Synthesis of morphologically diverse dual thermo- and pH-responsive nano-objects *via* RAFT-mediated emulsion PISA

Svetlana Lukáš Petrova,* Ewa Pavlova, Martin Hrubý and Václav Pokorný



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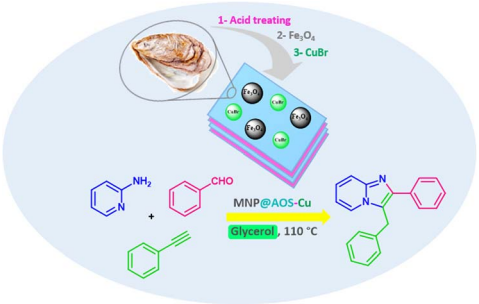
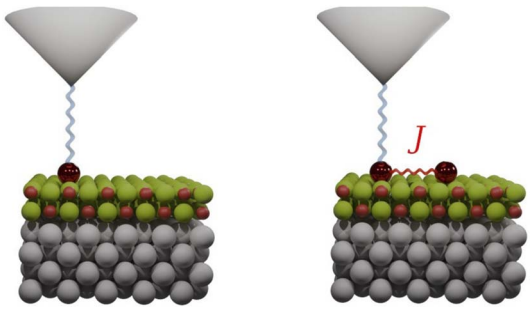


A copper bromide-decorated magnetic oyster shell biosupport as a sustainable catalyst for heterogeneous synthesis of imidazo[1,2-*a*]pyridines in glycerol

Samane Ansari, Arefe Salamatmanesh,* Maryam Kazemi Miraki and Akbar Heydari*

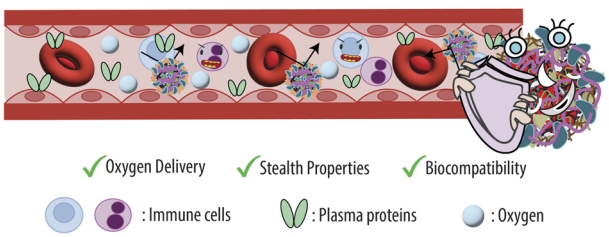
8048



Unraveling spin entanglement using quantum gates with scanning tunneling microscopy-driven electron spin resonance

Eric D. Switzer,* Jose Reina-Gálvez, Géza Giedke, Talat S. Rahman, Christoph Wolf, Deung-Jang Choi and Nicolás Lorente*

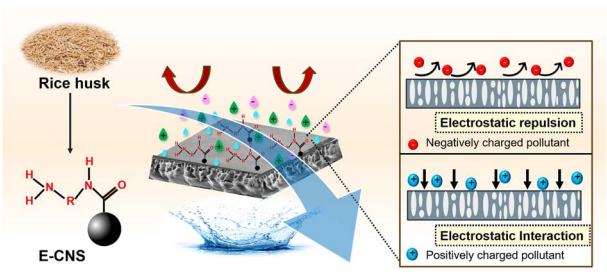
8058



Hemoglobin-loaded ZIF-8 nanoparticles functionalized with human serum albumin as stealth, stable, and biocompatible oxygen carriers

Despoina Douka, Arnau Dieste-Izquierdo, Clara Coll-Satue, Eva Jakljevič, Fernando Enrique Farfán-Esponda, Ana María Pablo Sainz-Ezquerra and Leticia Hosta-Rigau*

8074



Ethylenediamine modified carbon nanospheres from biomass for selective membrane filtration

B. G. Maya Patel, Sk Safikul Islam, Samir Mandal, Suryasarathi Bose and Gurumurthy Hegde*

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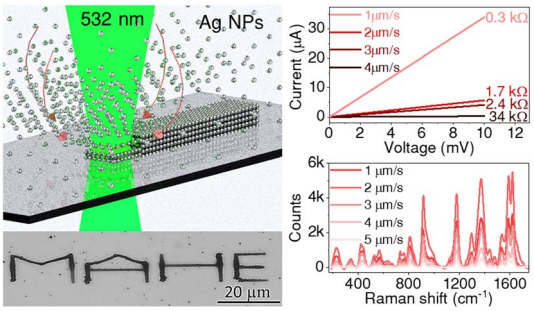
Continuous bubble-free laser printing of plasmonic nanostructures enabling annealing-free ohmic conduction and multifunctional trapping/spectroscopy studies

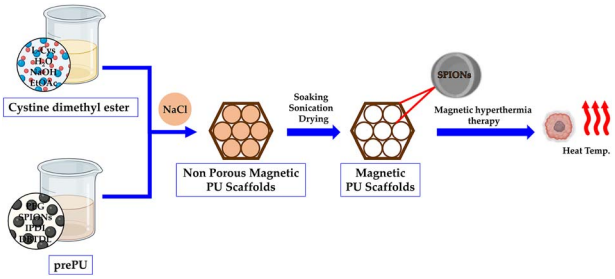
K. Monisha, Bharath Bannur, Shreyas M. S. and Sajan D. George*



8093

Surface-modified iron oxide nanoprobes in biomedical scaffolds

M. A. González-Gómez,* Á. Arnosa-Prieto, P. García-Acevedo, P. Diaz-Rodriguez, L. de Castro-Alves, Y. Piñeiro and J. Rivas*



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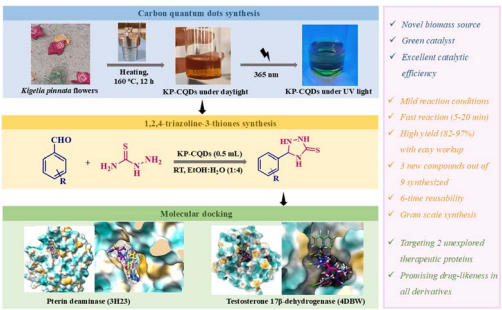
From botanical waste to a biocatalyst: *Kigelia pinnata* flower-derived CQDs for triazolidine-3-thione synthesis and their *in silico* evaluation

Sunita Teli, Shivani Soni, Nisarg Rana, Anu Manhas and Shikha Agarwal*



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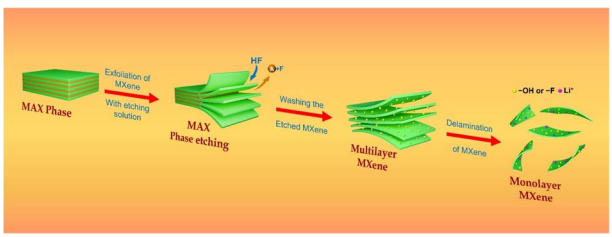
Tailored synthesis and morphological analysis of Mo_2CT_x and $Ti_3C_2T_x$ MXenes: a study on multilayered and delaminated architectures

Vasanth Magesh, Raji Atchudan, Sandeep Arya, Surendra H. Mahadevegowda and Ashok K. Sundramoorthy*



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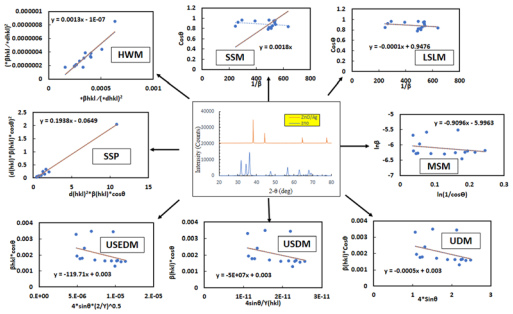

Structural insights into zinc oxide–silver nanocomposite *via* different XRD models: rapid synthesis with photocatalytic & antibacterial applications

Md. Abdus Samad Azad, Md. Shahadat Hossain, Shassatha Paul Saikat, Md. Rifat Hasan and Shukanta Bhowmik*

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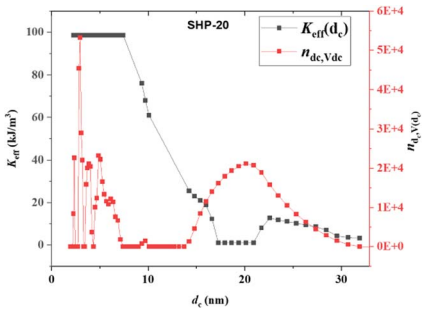

Estimation of effective anisotropy constant distribution of magnetic nanoparticles based on magnetic particle spectroscopy

Haochen Zhang,* Yi Sun, Haozhe Wang, Zhongzhou Du, Teruyoshi Sasayama and Takashi Yoshida

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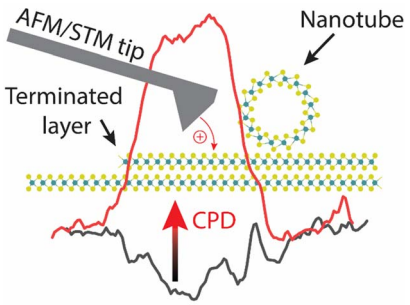

Edge and defect effects on charge distribution in collapsed MoS_2 nanotubes

Matjaž Malok,* Janez Jelenc, Anja Pogačnik Krajnc and Maja Remškar

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