

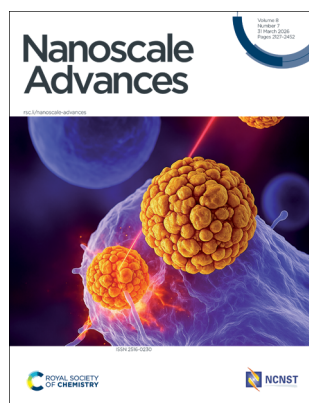
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Cover
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EDITORIAL

2136

Introduction to ultrafast meets ultrasmall: exploring the uncharted territory of quantum dynamics

Kristina R. Rusimova, Thomas Siday and Marcello Righetto

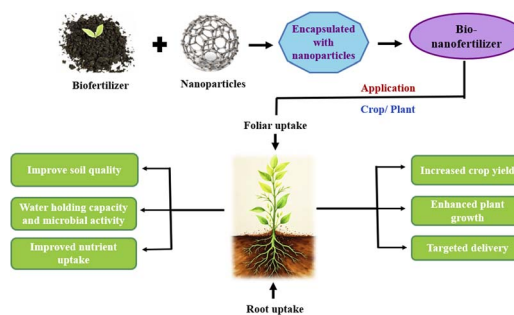


REVIEWS

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Revolutionizing agroecosystems through next-generation bio-nanofertilizers: an overview toward sustainable agriculture

Samukarani Swain, Lala Behari Sukla* and D. P. Krishna Samal



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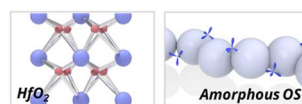
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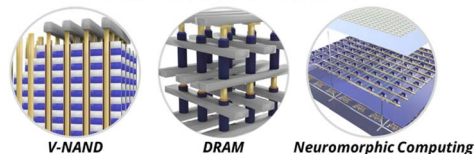
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Recent progress in HfO₂-based ferroelectric devices with oxide semiconductor channels: a comprehensive review

He Young Kang, Yun Ho Shin, Da Eun Kim, Dae Woong Kwon* and Jae Kyeong Jeong*



Ferroelectric Device with Oxide Semiconductor



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Microneedles meet photomedicine: emerging strategies for diagnosis and therapy of skin diseases

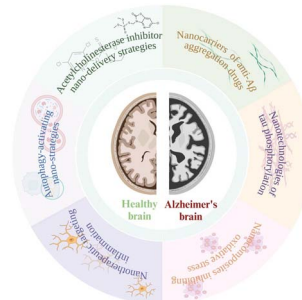
Zhehong Zhou, Yixuan Li, Meiliang Guo, Xuan Zhao, Lin Ma, Qinqin Meng* and Hui Deng*



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Nanotechnology-based targeted delivery strategies for the treatment of Alzheimer's disease

Xiaokui Yuan, Qin Tang and Tong Wang*

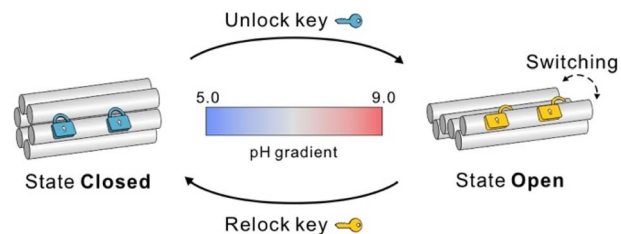


COMMUNICATIONS

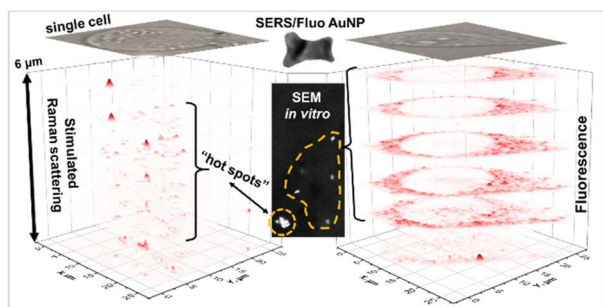
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A pH-stable dynamic DNA nanomachine with controllable conformational switching

Lixuan Lin, Kaiyi Liang, Xiuli Gao, Jiang Li, Linjie Guo,* Kai Jiao* and Lihua Wang



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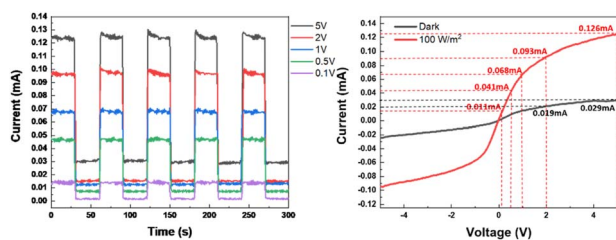


Surface-enhanced stimulated Raman scattering and fluorescence probing of plasmonic nanoparticles in cellular environments: insights into their spatial distribution and aggregation

T. Senapati, C. Gerecke, D. Wigger, B. Kleuser, E. Solovyeva, K. Semenov, V. Sharoyko, K. Babich, A. Smirnov and E. Rühl*

PAPERS

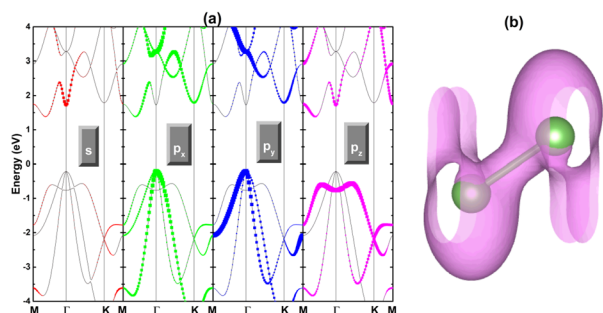
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Low-temperature growth of high-conductivity graphene/copper structures: applications in energy-efficient graphene photodetectors

Yu-Jin Liu, Yi-Hsiang Shih, Peng-Chi Wang, Yi-Cheng Huang, Shu-Wei Wang* and Wei-Chen Tu*

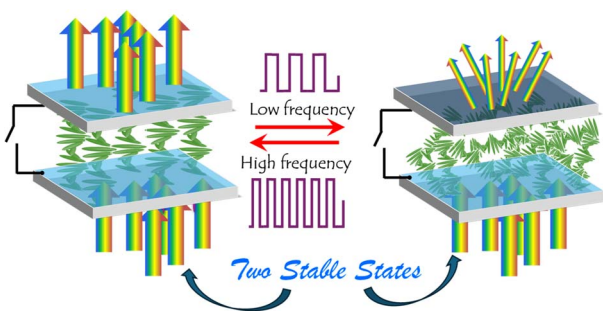
2246



First principles investigation of the ferromagnetism in TM-doped arsenene monolayer (TM = Mn and Fe)

Pham Minh Tan, Nguyen Thanh Son, R. Ponce-Pérez, Duy Khanh Nguyen, J. Guerrero-Sanchez and D. M. Hoat*

2257



Nano helical cholesteric liquid crystals exhibit long term bistability for energy saving smart windows

Niveen Huseen and Ibrahim Abdulhalim*

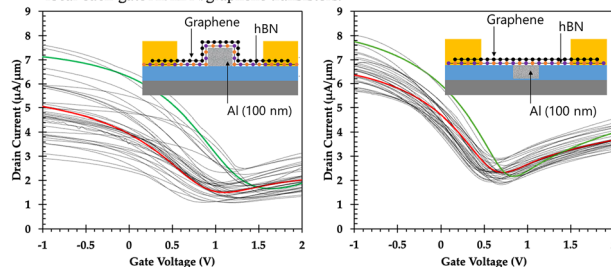


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Raised or recessed? Finding the optimal gate architecture for improving the static performance of graphene transistors

Tzu-Jung Huang, Andrew Spencer, Luke Ingraham, Anibal Pacheco-Sanchez and Ivan Puchades

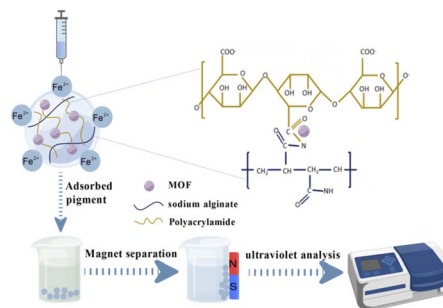
A recessed gate architecture significantly improves the performance and variation of local back-gate Al/hBN/graphene transistors.



2283

Metal–organic framework (MOF)-embedded magnetic polysaccharide hydrogel beads for rapid and selective adsorption of malachite green and crystal violet

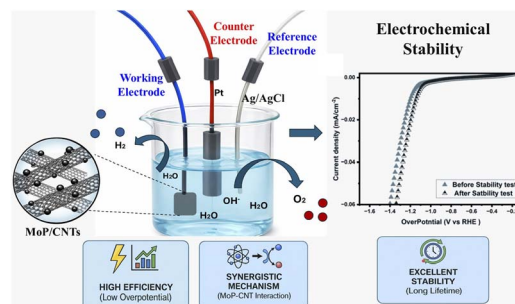
Anni Fang, Jie Gao, Yunzhu Lu, Lidong Wu and Lei Cheng*



2291

Electrocatalytic activity of MoP/CNTs nanohybrid for water splitting: a step towards improved HER kinetics

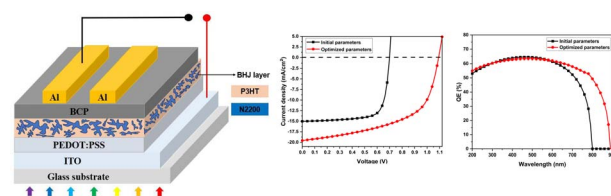
Ayesha Rehman, Erum Pervaiz,* Zirwa Noor and Waheed Miran



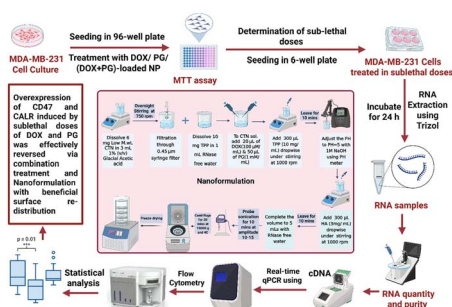
2306

Numerical analysis and performance optimization of poly(3-hexylthiophene):polynaphthalene-bithiophene heterostructure device using SCAPS-1D simulation

Md. Nasir Uddin and Nazia Chawdhury*



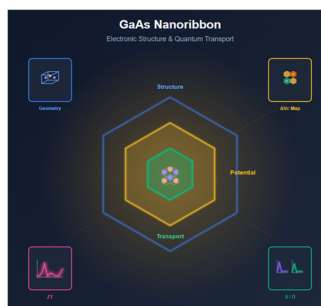
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Low-dose DOX–polygodial nanosystem modulates the CD47/CALR axis for safer triple negative breast cancer treatment

Hadir M. Emara, Rana A. Youness, Tamer M. Manie, Anwar Abdelnaser* and Nageh K. Allam*

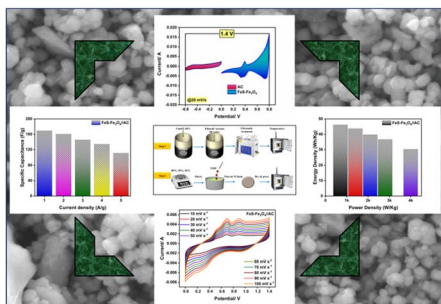
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Quantum engineering of GaAs nanoribbons for advanced thermoelectric energy conversion

Souraya Goumri-Said* and Mohammed Benali Kanoun

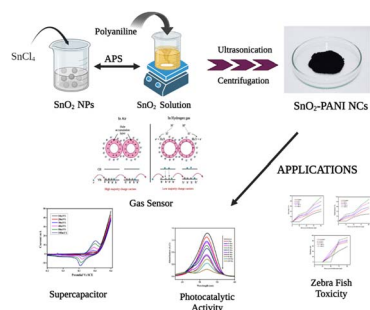
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Facile synthesis of FeS–Fe₃O₄ nanocomposites: highly stable & enhanced electrochemical performance in asymmetric supercapacitor applications

Junaid Riaz, Zahra Bayhan, Ghulam Murtaza, Muhammad Arif* and Amina Bibi*

2378



Effective photocatalysis and toxicity investigations in zebra fish embryos using highly selective hydrogen sensors and supercapacitor electrode materials for SnO₂–PANI nanocomposites

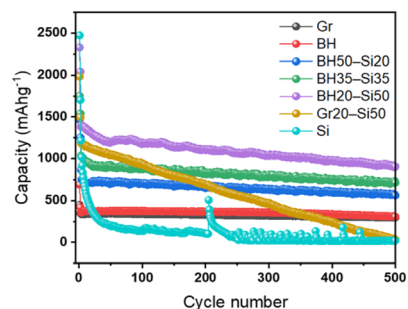
Amutha Eswaran,* Rajadurai Pandian Subramaniam, Madhumitha Thirumalainambi, Gurusamy Annadurai* and Vijayalakshmi Shankar*



2398

Biomass-derived hard carbon host with added commercial silicon for high-capacity lithium-ion battery anodes

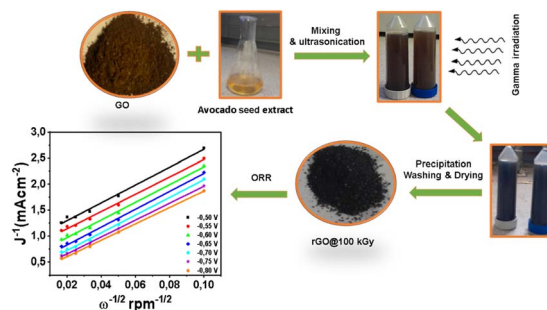
Alireza Fereydooni, Chenghao Yue, Puritut Nakhanivej, Maria Balart Murria, Mingrui Liu, Yuexi Zeng, Zhijie Wei, Qiuju Fu, Xuebo Zhao, Melanie J. Loveridge and Yimin Chao*



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Gamma radiation assisted reduction of graphene oxide in *Persea americana* Mill. seed extract: characterization and oxygen reduction reaction in alkaline and neutral media

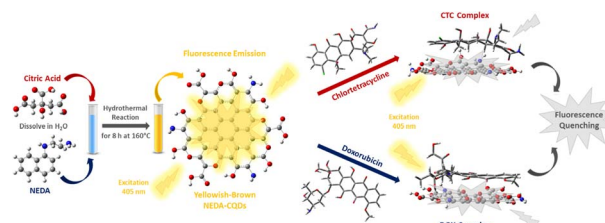
Nkosingiphile E. Zikalala, Shohreh Azizi,* Nomvano Mketo, Ali. A. Zinatizadeh, Touhami Mokrani and Malik M. Maaza



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Nitrogen-doped carbon quantum dots as fluorescent sensor for doxorubicin and chlortetracycline: experimental and DFT insights

Sondos Lotfy, Mohamed M. Aboelnga, Elhossein A. Moawad and Elsayed Elbayoumy*



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Correction: A comprehensive analysis of nanomagnetism models for the evaluation of particle energy in magnetic hyperthermia

N. Maniotis,* M. Maragakis and N. Vordos

