

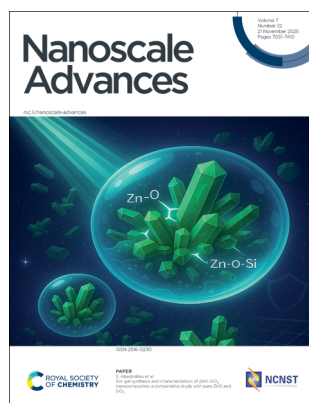
# Nanoscale Advances

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## IN THIS ISSUE

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### Cover

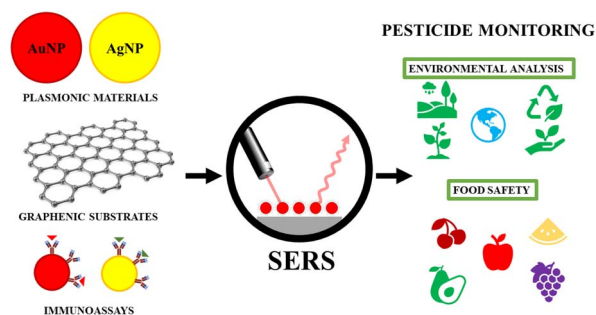
See S. Abedrabbo *et al.*,  
pp. 7145–7155. Image  
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Sufian Abedrabbo &  
Mohammad Zeidan from  
*Nanoscale Adv.*, 2025, 7, 7145.

## REVIEWS

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### Surface-enhanced Raman spectroscopy as a tool for food and environmental monitoring of pesticides: recent trends and perspectives

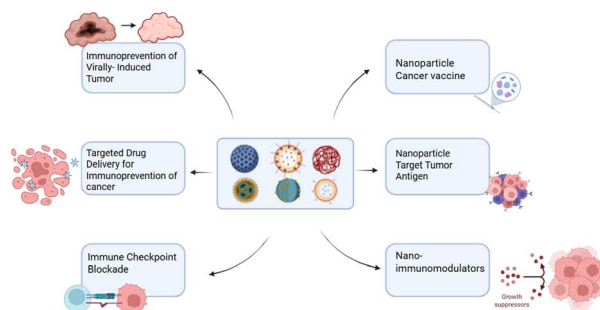
Gabriel Fernandes Souza dos Santos, Giordano Toscano Paganoto, Lucas Carreira Cosme, Adilson Ribeiro Prado, Sérgio Túlio Alves Cassini, Marco César Cunegundes Guimarães and Jairo Pinto de Oliveira\*



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### Nanomedicine revolutionizing cancer immunotherapy: recent advancements in nanotechnological strategies and applications

Jay Bhatt, Sweny Jain, Sharad Gupta\* and Dhiraj Devidas Bhatia\*



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## REVIEWS

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**Interfacial engineering of nano-copper: mechanisms, strategies, and innovations for oxidation resistance**

Bo Zhang, Ziyin Zhou,\* Jing Huang, Jiani Zhan, Qiuyu Yao, Rui Lu, Ruixu Hu and Bohong Zhu

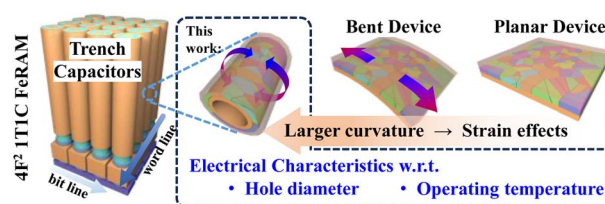


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**Investigating the impact of 3D trench structures on HfO<sub>2</sub>-based ferroelectric capacitors**

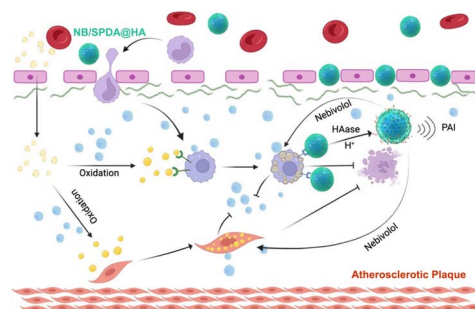
Zijie Zheng, Zuopu Zhou, Yue Chen, Xiaolin Wang, Leming Jiao, Dong Zhang, Yang Feng and Xiao Gong\*



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**Polydopamine and hyaluronic acid-coated dual-responsive silica nanoparticles for targeted atherosclerosis imaging and therapy**

Yuanzhe Lin, Chenyuan Huang, Xiao Hou, James Chen Yong Kah\* and Jiong-Wei Wang\*

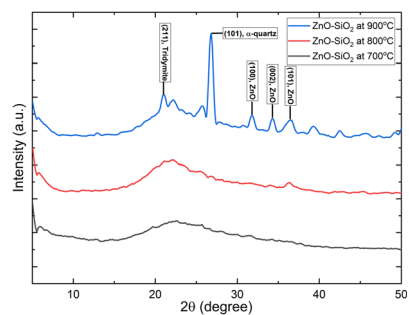


## PAPERS

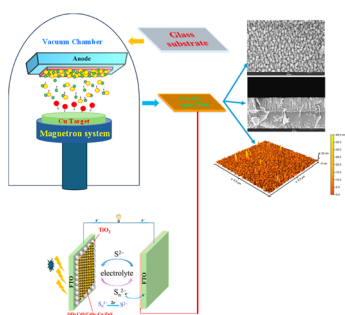
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**Sol-gel synthesis and characterization of ZnO-SiO<sub>2</sub> nanocomposites: a comparative study with pure ZnO and SiO<sub>2</sub>**

A. Samuel, A. Abdullah, G. Xavier, S. Stephen, M. M. Zeidan, D. Choi and S. Abedrabbo\*



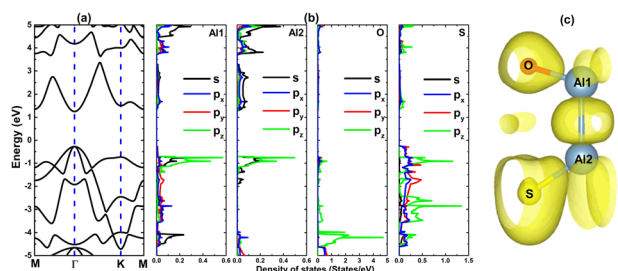
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### Nitrogen-doped $\text{Cu}_4\text{O}_3$ thin films as high-performance counter electrodes for quantum dot-sensitized solar cells

Pham Minh Khang, Le Thanh Duy, Huu Phuc Dang and Tran Le\*

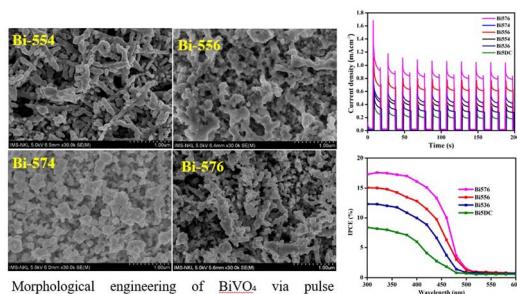
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### Electronic and magnetic properties of Janus monolayer $\text{Al}_2\text{SO}$ modified by defects and doping: a first-principles study

Nguyen Thanh Tien, R. Ponce-Pérez, Armando Reyes-Serrato, J. Guerrero-Sanchez and D. M. Hoat\*

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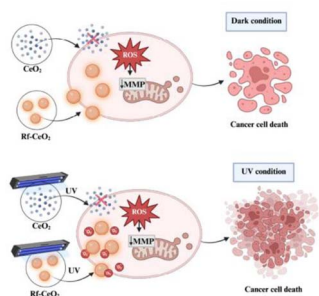


Morphological engineering of  $\text{BiVO}_4$  via pulse electrodeposition with controlled current intensity

### Structure–property–performance correlation in $\text{BiVO}_4$ photoanodes synthesized by intensity-tuned pulse electrodeposition

Nguyen Thi Huyen, Thi Viet Ha Luu, Tran Le and Huu Phuc Dang\*

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### Engineered riboflavin–cerium oxide nanoparticles for enhanced phototoxicity toward triple-negative breast cancer cells

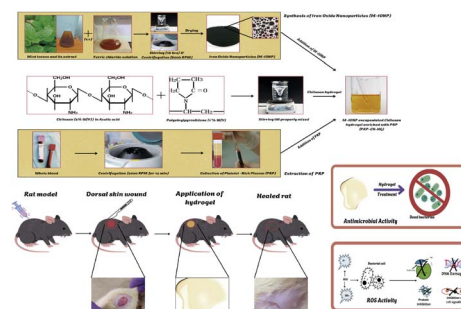
Anongnat Wongpan, Sopon Nuchpun, Napasorn Tana-atsawapon, Patraporn Luksirikul, Sarisa Suriyarak, Jintana Artsanthia and Kanlaya Prapainop Katewongsa\*



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### Biosynthesized iron oxide-nanoparticle encapsulated hydrogel functionalized with platelet-rich plasma (PRP) accelerates wound healing in an animal model

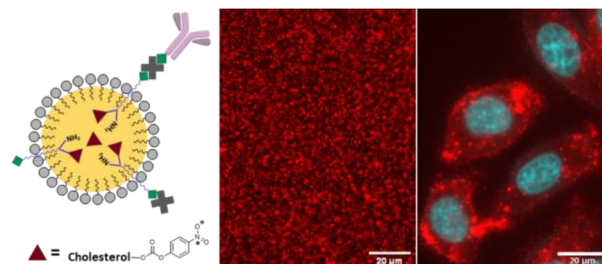
Lipsa Leena Panigrahi, Siddharth Satpathy, Pallavi Samal, Shashank Shekhar, Shakti Ketan Prusty and Manoranjan Arakha\*



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### Functionalization of lipid nanoemulsions with humanized antibodies using plug-and-play cholesterol anchor for targeting cancer cells

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### Utilization of waste leather for efficient removal of $\text{Ca}^{2+}$ and $\text{Mg}^{2+}$ in lithium carbonate production via nano-structural adsorption

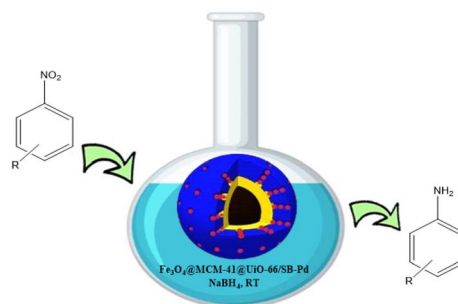
Pengxiang Zhao,\* Jianyu Wei, Fumei Wang, Yang Luo and Luming Yang\*



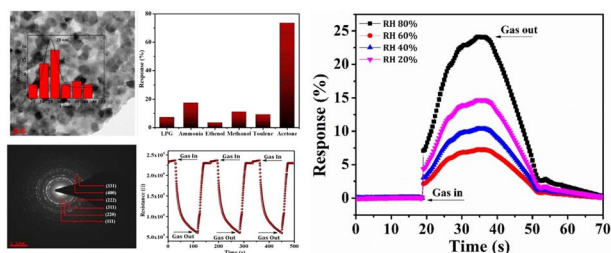
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### Palladium-containing magnetic UiO-66-NH<sub>2</sub> as a highly powerful and recoverable nanocatalyst for the reduction of nitrobenzenes

Shiva Kargar and Dawood Elhamifar\*



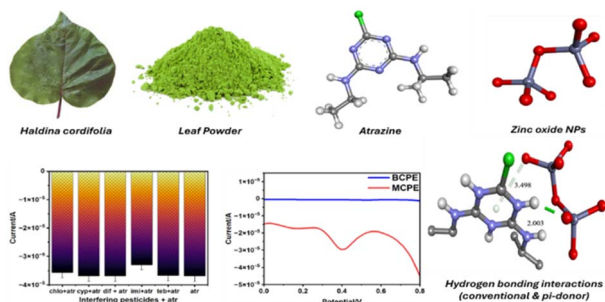
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Anil B. Mugutkar, Shyam K. Gore, Siddheshwar D. Raut, Sunil M. Patange, Rajaram S. Mane, Shoyebmohamad F. Shaikh,\* Sagar E. Shirsath\* and Santosh S. Jadhav\*

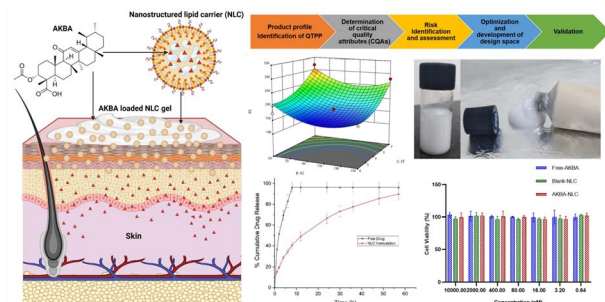
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### Green-synthesized ZnO nanoparticles for efficient atrazine detection: electrochemical and computational investigations

Simranjeet Singh, Pavithra N., Radhika Varshney, Ashutosh Panchal, Nabila Shehata, Nadeem A. Khan, Joginder Singh and Praveen C. Ramamurthy\*

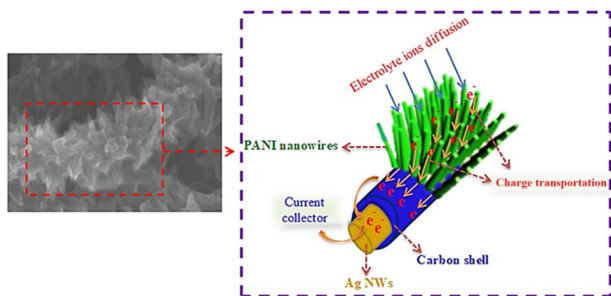
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### Enhancing 3-acetyl-11-keto- $\beta$ -boswellic acid skin permeation via nanostructured lipid carriers: integrating quality by design principles for risk estimation and optimization

Sakshi Priya, Vaibhavi Meghraj Desai, Hemraj Singh, Rajeev Taliyan and Gautam Singhvi\*

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### Carbon–polyaniline coaxial structures for enhanced charge transfer and capacitance in supercapacitors

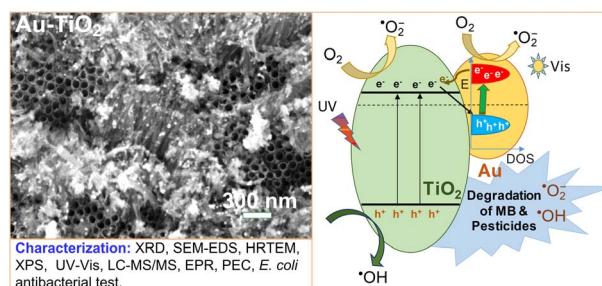
Pham Thi Thuy Nga, Nguyen Van Quy, Dinh Khoi Dang, Nguyen Thanh Sang, Ho Phuong, Nguyen Tran Nhac Khoa, To Minh Dai., Huynh Le Thanh Nguyen\* and Ly Tan Nhiem\*



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### Plasmonic Au–TiO<sub>2</sub> nanowire/nanotube heterostructures for multifunctional photocatalysis: dye and pesticide degradation, water splitting, and antibacterial activity

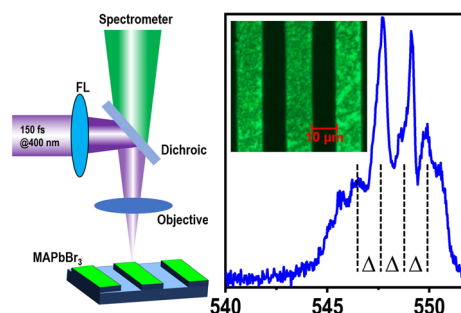
Ngo Ngoc Uyen, Nguyen Chi Toan, Nguyen Truong, Ly Anh Tu and Phuoc Huu Le\*



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### Phase-locked random lasing in patterned microstripes of MAPbBr<sub>3</sub> porously structured with nanoholes

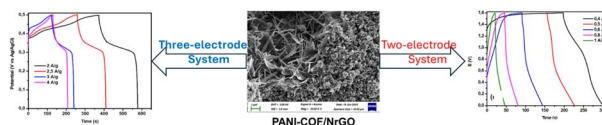
Yuxin Zhang, Qin Zhang and Xinping Zhang\*



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### Synergistic enhancement of supercapacitor performance using covalent organic frameworks integrated with nitrogenated-reduced graphene oxide and polyaniline

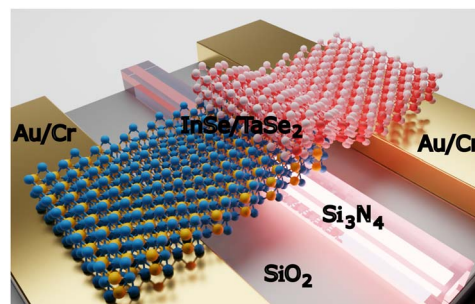
Daniel Malesela Teffu, Katlego Makgopa and Kwena Desmond Modibane\*



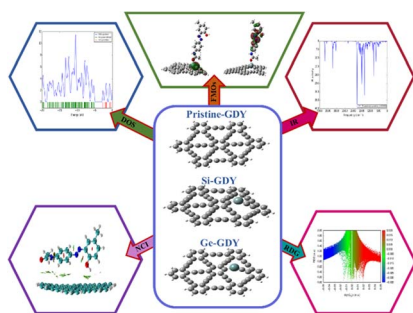
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### High-responsivity InSe/TaSe<sub>2</sub> photodetectors integrated on low-loss silicon nitride waveguides

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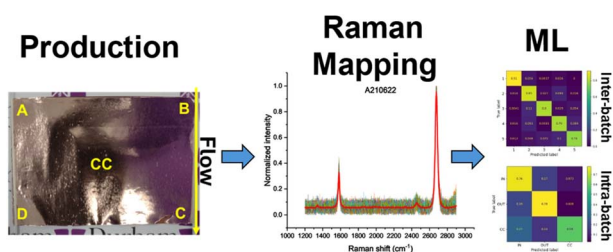
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### DFT investigation of dye adsorption on pristine and doped graphdiyne: toward efficient removal of disperse yellow 3 from wastewater

Mohamed M. Aboelnga,<sup>\*</sup> Mariam M. Seliem, Elsayed El-Bayoumy and Mohsen El-Tahawy<sup>\*</sup>

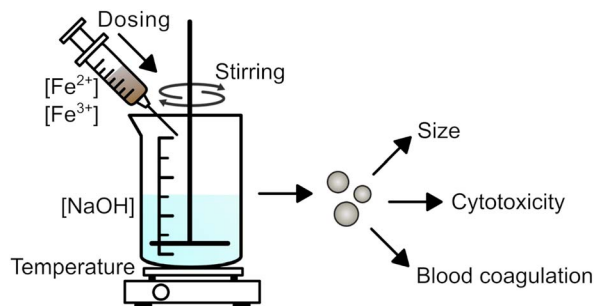
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### Simple graphene film production by chemical vapour deposition and the use of AI for quality analysis

Selene Muñoz-Vargas, Marcos Fernando Perez-Pucheta and Karl S. Coleman<sup>\*</sup>

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### Influence of coprecipitation synthesis parameters on the physicochemical properties and biological effects of iron oxide nanoparticles

Marco Reindl, Verena Zach, Gerhard Cvirn and Sebastian P. Schwaminger<sup>\*</sup>

