

IN THIS ISSUE

ISSN 1144-0546 CODEN NJCHES 49(24) 10003-10506 (2025)



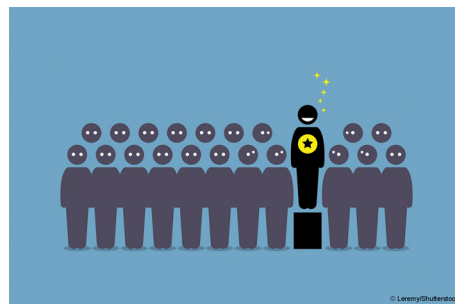
Cover

See Claudia Iriarte-Mesa and Freddy Kleitz, pp. 10018-10034. Image reproduced by permission of Claudia Iriarte-Mesa from *New J. Chem.*, 2025, 49, 10018. Graphical representations of nanoparticles (by irshiny, macrovector, and kjpargeter), keys (by murniatihanur), the padlock (by jakadesainpwk), and the cell background (by stocky01) were obtained from Freepik and subsequently modified.

EDITORIAL

10017

Outstanding Reviewers for *New Journal of Chemistry* in 2024

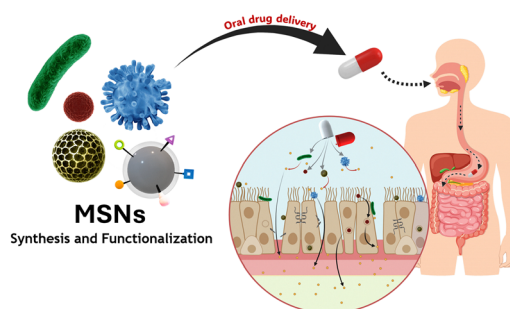


PERSPECTIVE

10018

Tailored mesoporous silica nanoparticles for overcoming gastrointestinal barriers: a perspective on advanced strategies for oral delivery

Claudia Iriarte-Mesa and Freddy Kleitz*



Royal Society of Chemistry approved training courses

Explore your options.
Develop your skills.
Discover learning
that suits you.

**Courses in the classroom,
the lab, or online**

Find something for every
stage of your professional
development. Search our
database by:

- subject area
- location
- event type
- skill level

Members **get at least 10% off**

Visit rsc.li/cpd-training



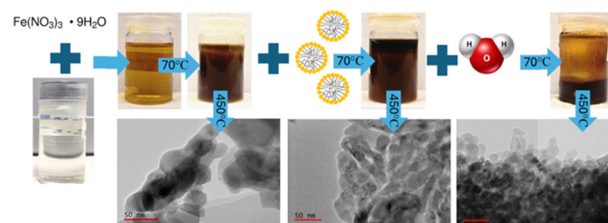
**SAVE
10%**



10035

Surfactant effects on the synthesis of oxide nanoparticles using deep eutectic solvents

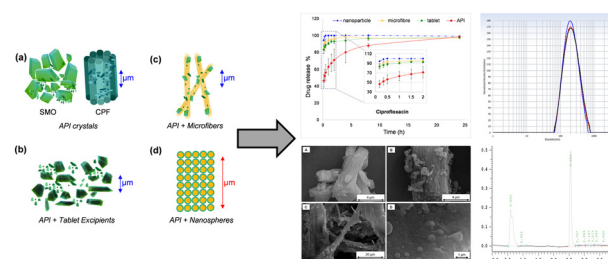
Iva Manasi,* Ronak Kakadiya, Ria S. Atri,
Michael S. Fairclough, James Douth and Karen J. Edler*



10047

Assessment of the utility of chitosan nanoparticles and microfibrers in drug delivery applications of sulfamethoxazole and ciprofloxacin

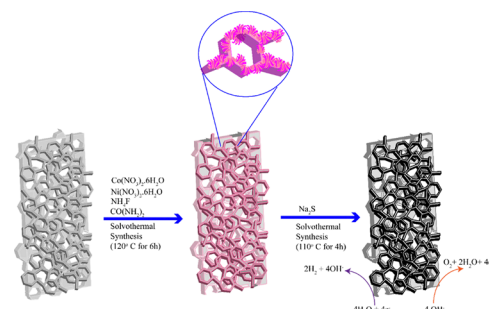
Nussara Soontorntepwarukul,
Kanokthip Boonyarattanakalin, Poowadon Fukasem,
Sitthinan Somkhuan, Kasama Srirussamee,
Kiattawee Choowongkamon and M. Paul Gleeson*



10056

Fabrication of a 3D iron-modified NiCo₂S₄ structure on nickel foam as a bifunctional electrocatalyst for overall water splitting

Gourav Singla,* Mani Mahajan,* Siddheshwar N. Bhangе
and Varchaswal Kashyap



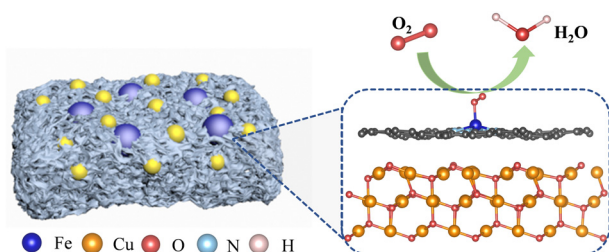
10065

CuWO₄ doped with Se for enhanced photocatalytic antibacterial activity

Chenchen Wang, Dandan Gai, Jiye Fan, Huaxiang Lin,*
Rusheng Yuan, Jinlin Long and Qun Lin



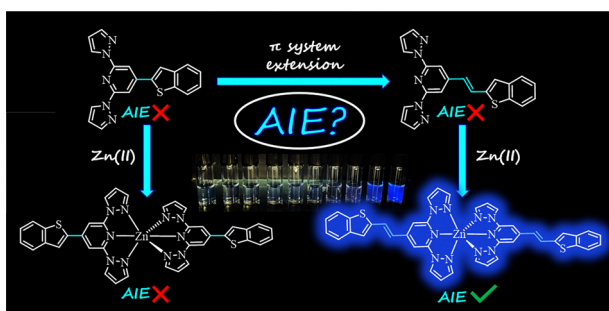
10080



Boosting activity toward the oxygen reduction reaction of a hyper-crosslinked FeCu bimetal nanocatalyst *via* mimicking cytochrome c oxidase

Kunpeng Song,* Wenwen Yang, Jinfeng Wei and Fang Liao

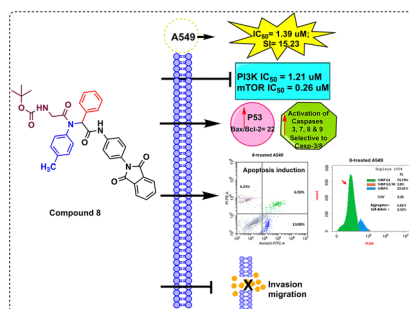
10089



Unraveling AIE in zinc(II) coordination complexes: role of ligand structure and mechanistic insights

Y. Oleksii, Y. Cheret, M. Allain, A. Brosseau, S. Haacke and A. El-Ghayoury*

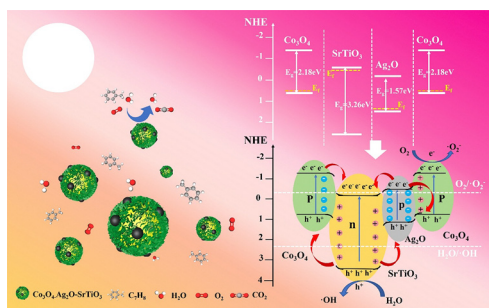
10102



Dual targeted Ugi-bisamides induce caspase-mediated apoptosis and inhibit PI3K/mTOR signaling in NSCLC

Mohammed Salah Ayouf,* Khadiga Yousry, Hamida Abdel-Hamid, Mohamed S. Nafie, Doaa A. Ghareeb, Aliaa Masoud, Marwa F. Harras, Jawaher Y. Al Nawah, Magda M. F. Ismail* and Gina N. Tageldin*

10122



Synergistic effects of a dual p-n heterojunction in a $\text{Co}_3\text{O}_4\text{-Ag}_2\text{O-SrTiO}_3$ ternary composite for enhancing photocatalytic degradation of toluene

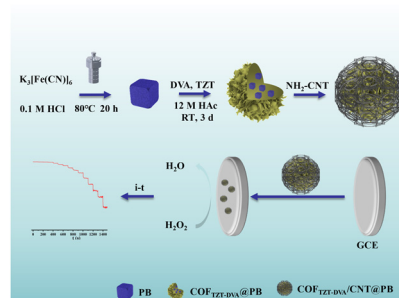
Chuang Xu, Dongliang Gao, Huimin Zhang, Jingyue Bi, Fan Xue, Haoyu Zhang, Wenqing Feng, Zhaoyang Fei* and Xu Qiao*



10136

A novel electrochemical sensor with COF_{TZT-DVA}/CNT@PB nanoflowers for hydrogen peroxide detection

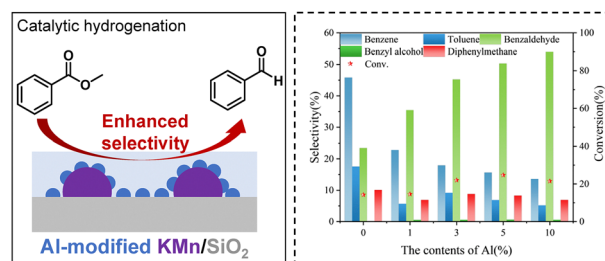
Yuting Liu, Mengjie Yu, Jianhui Xiong, Longfei Miao* and Yonghai Song



10145

An enhanced selective hydrogenation of methyl benzoate and impacts promoted by Al-modified KMn/SiO₂

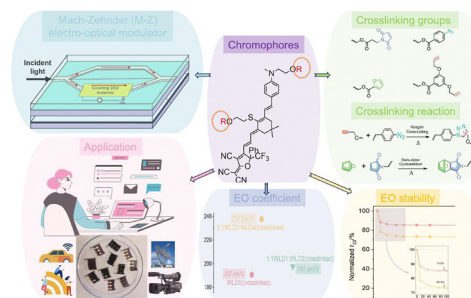
Wenlong Hu, Wei Wang, Zhiren Xu, Su Yao, Weiguo Huang, Chuang Xing,* Kuai Yu* and Zhiguo Zhang



10153

Novel cross-linked chromophores based on Diels–Alder or Huisgen reactions

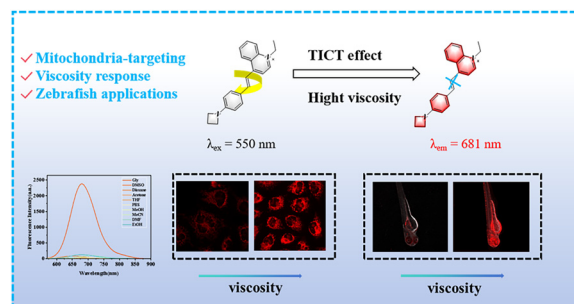
Chuying Liu, Wenlong He, Youling Chen, Yu Zhang, Zhihan Huang, Fuyang Huo* and Fenggang Liu*



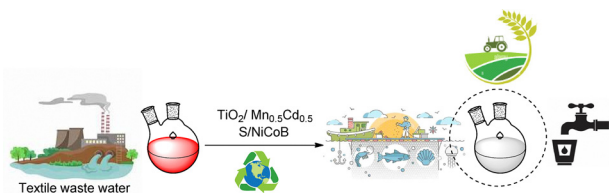
10166

Construction of a mitochondria-targeted fluorescent probe for the detection of viscosity in living cells and zebrafish

Shuang Hu, Youbo Lai, Yi Yang, Youwei Wu and Weiyang Lin*



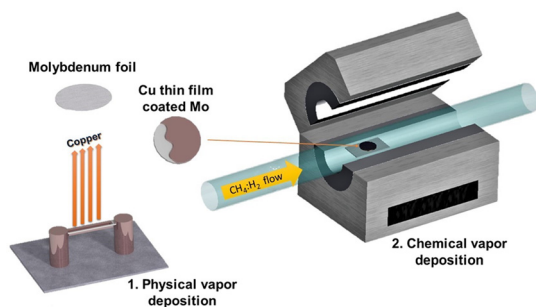
10173



Two-step synthesis of a ternary composite based on TiO_2 for effective removal of organic pollutants by photocatalytic degradation

Tayebeh Chaharrahi, Mohammad Hadi Givianrad,*
Kambiz Larijani and Parviz Aberoomand Azar

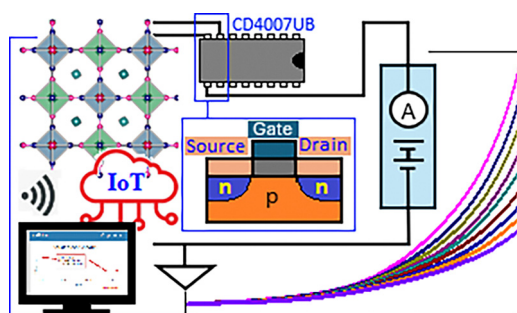
10194



Large-area growth of Mo_2C thin films and MXene structures via the PVD-CVD hybrid technique

Sina Rouhi,* Mehmet Bay, Ozan Aydin, Elif Sevgi Sicim,
Feridun Ay and Nihan Kosku Perkgoz

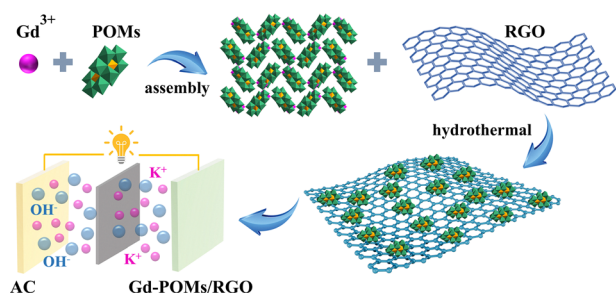
10205



Complexation driven synthesis of nickel ferrocyanide nanoparticles for non-enzymatic glucose sensing application using field effect transistors and microcontroller-based platforms

Chandan Saha, Pooja Kumari, Sarit K Ghosh,
Harishchandra Singh and Kaushik Mallick*

10215



Three-dimensional porous Gd-POM/RGO composites for high-performance supercapacitor electrodes

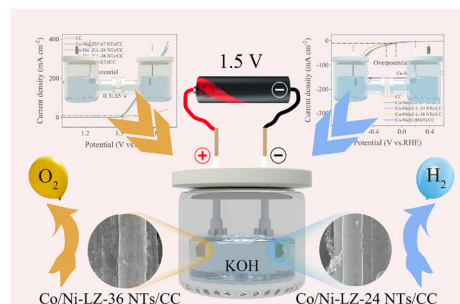
Fei Fei, Shuai Wang, Lanqin He and Pushan Wen*



10224

Enhanced electrocatalytic performance for overall water splitting: exploring heterojunctions and vacancy-engineered nanosheets

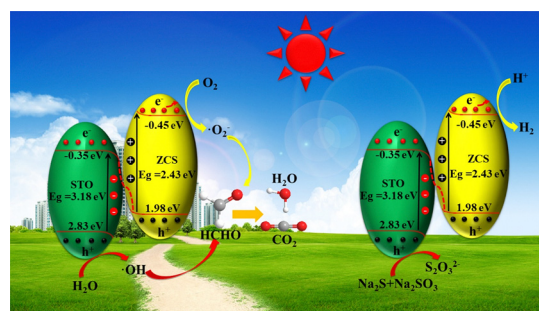
Dexin Yu, Yifan Zhang, Jun Wu,* Feng Zhang* and Fengyu Qu



10235

Construction of SrTiO₃/Zn_xCd_{1-x}S S-scheme heterojunction composites as efficient bifunctional photocatalysts for HCHO degradation and hydrogen production

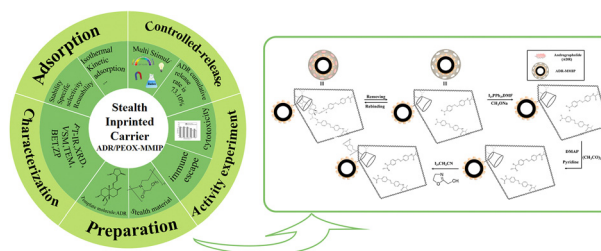
Dianxiang Peng, Yanjie Lv, Wenxi Zhang, Jing Sun,* Xiao Li, Hongfei Shi* and Zhongmin Su*



10247

Intelligent stealth andrographolide imprinted drug carrier of poly(2-ethyl-2-oxazoline) with multi-stimuli responsiveness and A549 lung cancer cell cytotoxicity

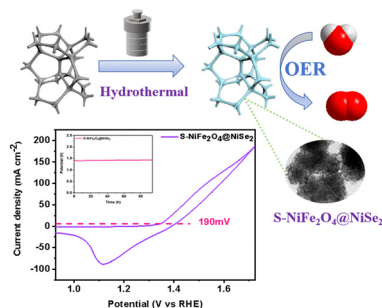
Chenxi Qi, Xianghua Zeng, Chensi Zeng, Jiajun Jiang and Ni Tan*



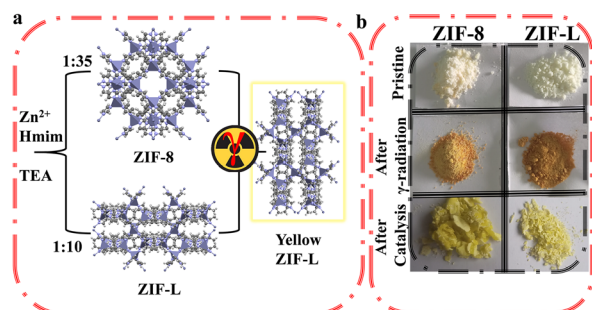
10261

Heterogeneous S-NiFe₂O₄@NiSe₂ nanospheres for the oxygen evolution reaction with long-term stability

Fangyuan Fan, Chunlin Teng, Rongjin Zhu, Lina Zhu, Lingfei Xu and Yeshuang Du*



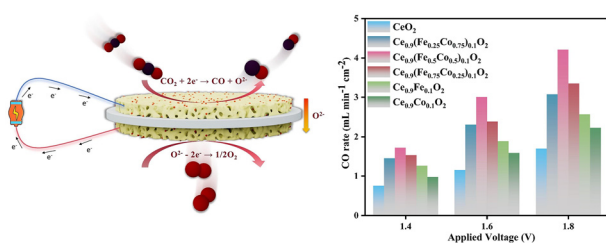
10268



Gamma radiation-induced defects, phase transformation, and color change in ZIF materials (ZIF-8 and ZIF-L) for enhanced hydrogen generation

Hani Nasser Abdelhamid,* Ghada A. Mahmoud and R. M. Mahfouz

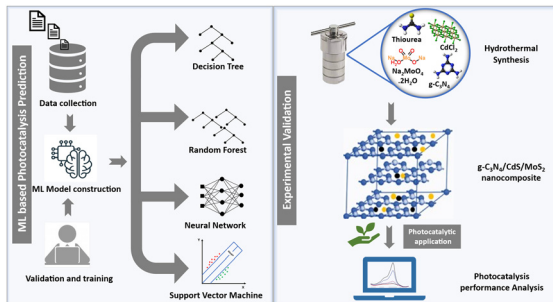
10278



In situ exsolution of FeCo alloy nanoparticles for highly efficient CO₂ electrolysis

Xiang Su, Huiquan Yan, Jiaming Ma, Xin Wang* and Lingting Ye*

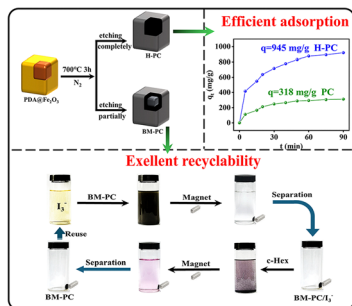
10287



Leveraging machine learning for predicting the photocatalytic performance of a g-C₃N₄/CdS/MoS₂-based heterostructure nanocomposite

Preeti Kumari, Chandni Devi,* Mukesh Kumar, Surender Kumar Sharma, Ravi Pratap Singh, Kamlesh Yadav and Gaurav Kumar Yogesh*

10309



Bell-shaped magnetic hollow porous carbon: an efficient and sustainably recycled iodine absorbent in aqueous solution

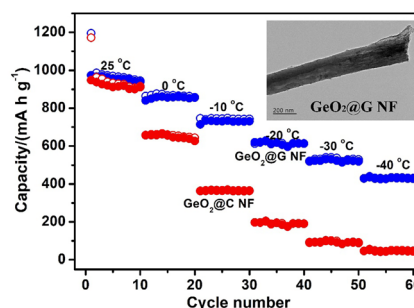
Chang Sun, Dehui Yang, Ye Li, Yaxi Shu, Huiyong Wang, Guoqing Zhuang,* Baozhan Zheng,* Juan Du* and Yong Guo



10317

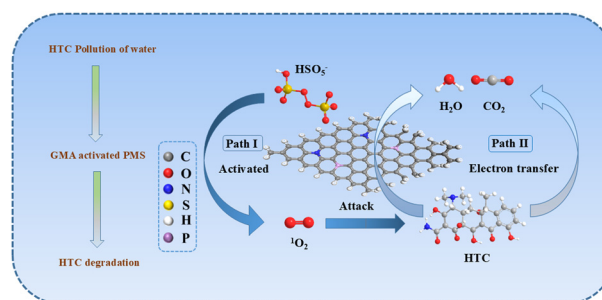
GeO₂/graphene nanofiber anode for low-temperature lithium-ion batteries

Bowe Cao, Fenghua Zhang, Fei Li* and Wei Wei*



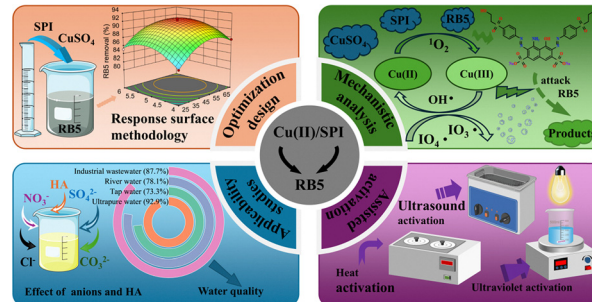
10324

Preparation of glucose-based N, P Co-doped carbon for non-radical pathway activation of PMS to degrade tetracycline hydrochloride

Qiqi Wu, Shuai Shi, Chaowu Liu, Tian Tang,*
Xixi Di, Dong Liu, Yixuan Shi, Xiao Liu,
Xingrui Gao and Xianzhao Shao*

10338

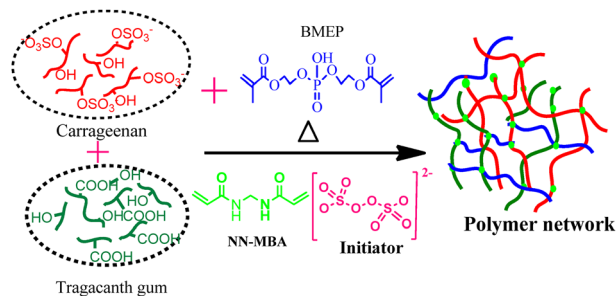
Degradation of reactive black 5 via a Cu(II)/NaIO₄-based advanced oxidation process: response surface methodology optimization, kinetic simulation and performance enhancement

Fan Bai, Yanjiao Gao,* Yongbo Xiao, Jingyi Yang,
Jiaxin Chen and Jing Xiao

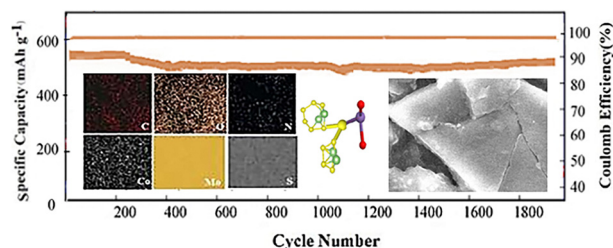
10357

Designing biocompatible functional network pH-sensing hydrogels for automated colonic therapeutic delivery

Nistha Thakur and Baljit Singh*



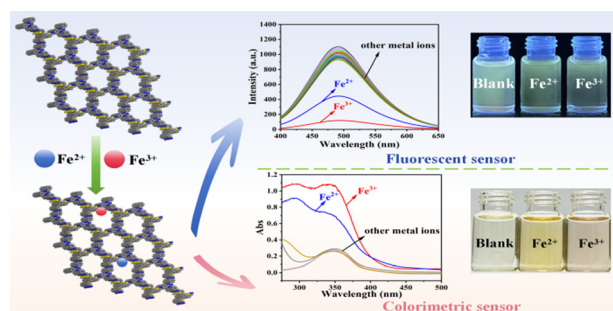
10379



Amino-functionalized reduced graphene oxide@MoS₂@CoS₂ heterostructure as a high-rate anode material for ultralong lifespan sodium–sulfur batteries

Navid Asfattahi,* Maryam Sadat Kiai, Nilgun Baydogan, Lingenthiran Samyalingam, Kumaran Kadirgama* and Chee Kuang Kok

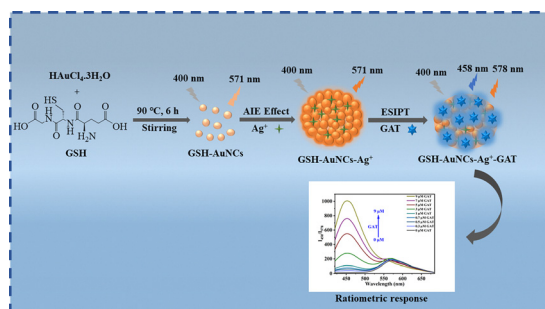
10388



A novel covalent organic framework containing triazine–trithiophene for dual-mode fluorescent and colorimetric detection of Fe²⁺ and Fe³⁺ in water, kale and bovine liver samples

Huaiyi Zhang, Zeeshan Ali, Wenzhong Hu* and Guang Wang*

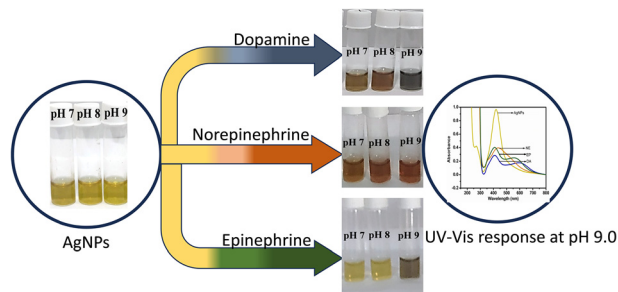
10401



Detection of gatifloxacin by a ratiometric fluorescent probe based on Ag⁺ ion triggered aggregation-induced emission

Awais Madni, Yuchan Zhang, Leyi Zhang, Yanan Qiang, Shengda Qi* and Honglin Zhai*

10410



pH-Dependent discriminative detection of catecholamine neurotransmitters using 4-boronobenzoic acid functionalized plasmonic silver nanoparticles as a colorimetric probe

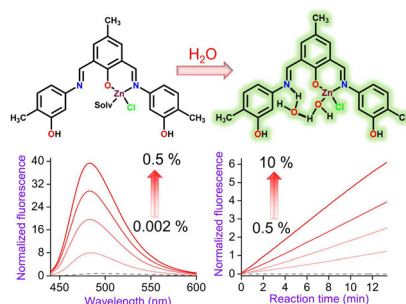
Saumya Singh and Kaushal Kumar Upadhyay*



10420

A water fluorosensor with a dual detection range for agricultural soil water and trace moisture absorption in organic solvents

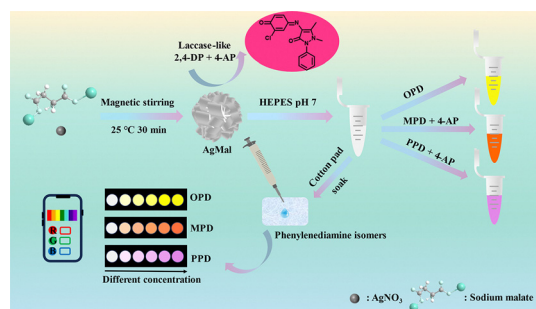
Chandi Charan Ghosh and Partha Pratim Parui*



10429

Highly active silver-based laccase-like nanozyme for colorimetric distinction and detection of phenylenediamine isomers

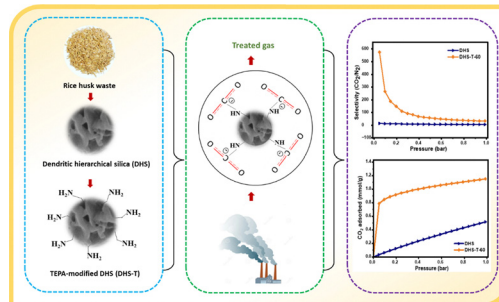
Yingjiang Wang, Mingjing Li, Lingbo Qu, Lanlan Yu* and Zhaohui Li*



10440

Upcycling rice husk waste into a tetraethylenepentamine (TEPA)-modified dendritic hierarchical silica adsorbent for selective CO₂ capture

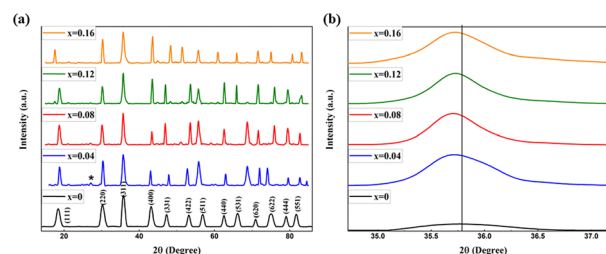
Amanuel Gidey Gebretatios,* Fawzi Banat, Thongthai Wittoon and Chin Kui Cheng*



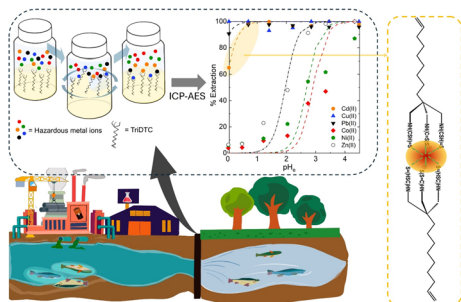
10456

Design and multifunctional potential of Al³⁺, Er³⁺-substituted Ni_{0.2}Cu_{0.8}Al_xEr_xFe_{2-2x}O₄ spinel ferrites for sustainable energy and environmental applications

Haleema Riaz, Saima Anjum,* Syeda Rabia Ejaz,* Muhammad Imran Khan* and Abdallah Shanableh



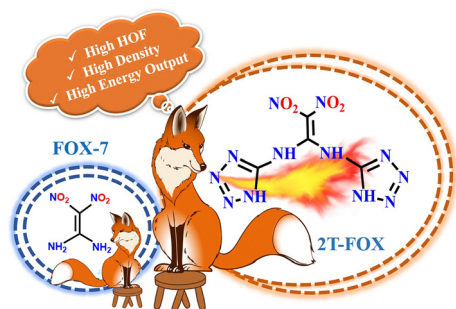
10471



Cd-ion removal using 1,1,1-tris(methyl *N*-carbodithioic acid)-9-decene extractant: synthesis, extraction behaviors, and mechanism

Fathia Lovita Farasi, Shintaro Morisada, Hidetaka Kawakita, Keisuke Ohto* and Jumina Jumina

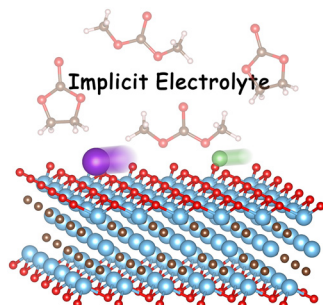
10479



Re-engineering of the FOX-7 structure: computational assessment of structural modifications on explosive performance and safety

Kalpna Sharma, Rimpi Devi, Vikas D. Ghule* and Srinivas Dharavath

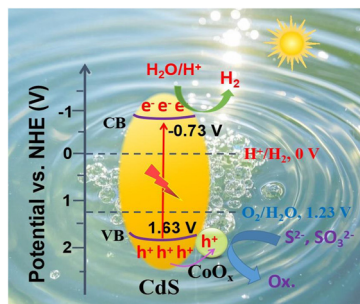
10488



Solvent effect on the storage behavior of metal ions on $\text{Ti}_3\text{C}_2\text{O}_2$ surfaces

Junjie Zeng, Kechen Li, Yongzhi Wang, Jianbo Zhang and Yang Zhou*

10493



Enhanced charge separation in a $\text{CoO}_x@ \text{CdS}$ core-shell heterostructure by photodeposited amorphous CoO_x for highly efficient hydrogen production

Haorui Liu,* Nana Yang, Chenchen Feng,* Lei Zhao and Ning Mi

