

## IN THIS ISSUE

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### Cover

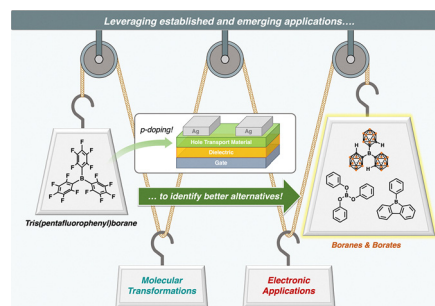
See Kathryn M. Wolfe, Michael J. Grant, Irene E. Park and Gregory C. Welch pp. 12032–12060. Image reproduced by permission of Kathryn M. Wolfe and Irene E. Park from *New J. Chem.*, 2025, 49, 12032.

## PERSPECTIVE

12032

### Tris(pentafluorophenyl)borane: leveraging historical and emerging work to identify alternatives for organic electronic applications

Kathryn M. Wolfe, Michael J. Grant, Irene E. Park and Gregory C. Welch\*

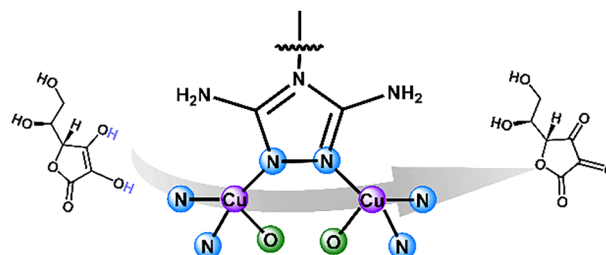


## COMMUNICATION

12061

### Mimicking ascorbic acid oxidase-like catalysis over adjacent dicopper centers

Ziheng Huang, Jinzhe Song, Nannan Xia, Yanqin Lv,\* Xun Hu\* and Fei He\*



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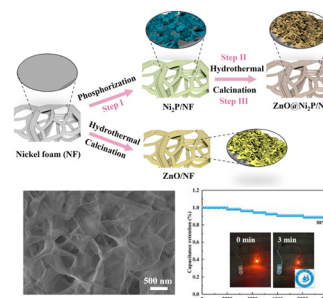


## PAPERS

12066

### Decoration of three-dimensional ZnO@Ni<sub>2</sub>P heterostructure nanoflake arrays: a novel electrode material for hybrid supercapacitors

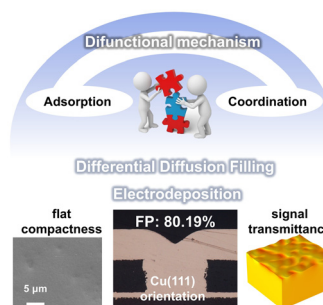
Lihua Cui,\* Kefeng Yang, Minhui Mao, Qingru Wang, Haoxu Yin and Wenbo Bao



12079

### Insights into the role of Basic Blue 7 as a leveler in copper superfilling within microvias

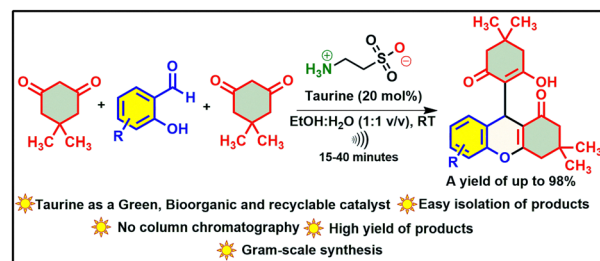
Yaqiang Li, Xuesong Peng, Ruopeng Li,\* Jie Jiang, Fan Meng, Youzheng Wu, Changsheng Cao, Guangzhao Wang, Penghui Ren,\* Hao Xu\* and Maozhong An



12090

### Ultrasonication-assisted, multicomponent, green and sustainable synthesis of benzopyrans employing taurine as a bioorganic catalyst

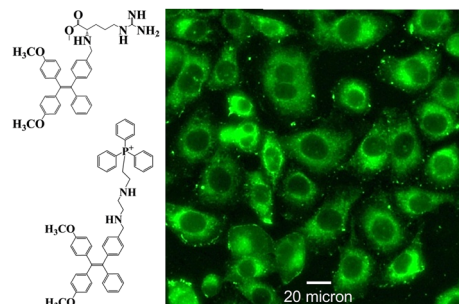
Swadhin Swaraj Acharya, Liza Mama Barad, Padma Ranjan Rout, Akash Bisoyi and Bibhuti Bhusan Parida\*



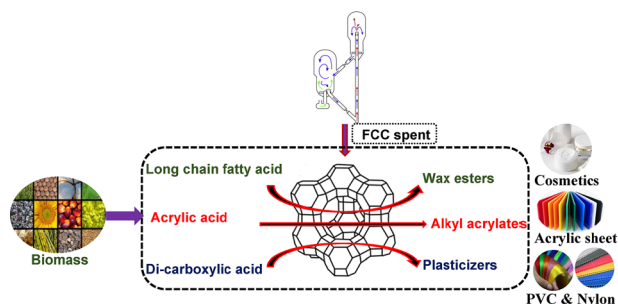
12102

### Mitochondrial delivery of aggregation-induced emission active molecules *via* a micellar nanocarrier

Kuheli Mandal, Santanu Shaw and Nikhil R. Jana\*



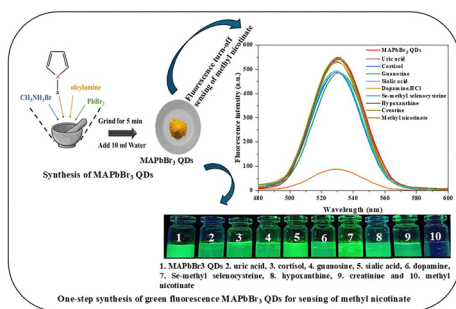
12109



### FCC spent catalyst: a reusable catalyst for efficient esterification to synthesize wax esters, acrylates and plasticizers

Durgaiah Chevella, Mridula Choudhary, Divya Dhakar, Supriyo Majumder,\* Saurabh Kumar Singh\* and Chiranjeevi Thota

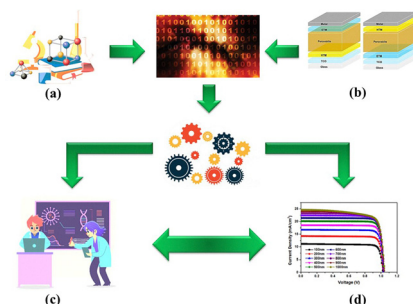
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### One-step synthesis of water stable MAPbBr<sub>3</sub> quantum dots for the fluorescence detection of methyl nicotinate as a tuberculosis biomarker

Nirav Vajubhai Ghinaiya, Pinalben Angarbhai Garasiya, Tae Jung Park and Suresh Kumar Kailasa\*

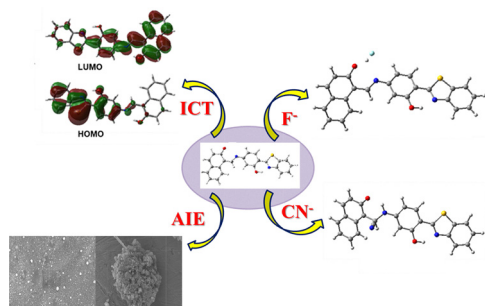
12129



### A group improvised PSO-random forest-based intelligent hybrid approach for advancing perovskite solar cell efficiency

Pratik De Sarkar,\* Subhajit Kar, Debashis De and K. K. Ghosh

12140



### Multistate luminescent probe: ICT-driven dual ESIPT-AIE for selective fluoride and cyanide ion recognition

Aastha Palta, Gulshan Kumar, Kamaldeep Paul and Vijay Luxami\*

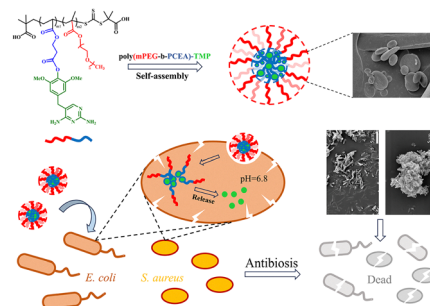


## PAPERS

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Antibacterial efficacy and pharmacokinetics of a poly(mPEG-*b*-PCEA)-trimethoprim conjugate

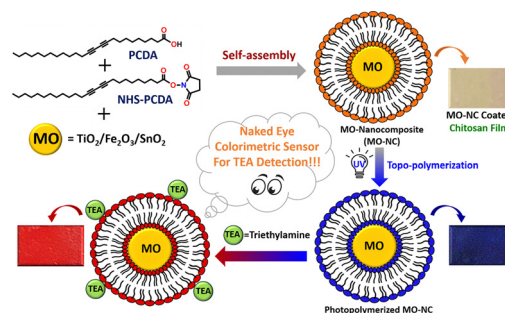
Ming Niu, Zhenghua Zhang, Rourou Wang, Yaxin Zhou, Jing Zhou, Lumei Pu and Weibing Xu\*



12165

 $\pi$ -conjugated polymer/metal oxide colorimetric sensor film for rapid, real-time, and ppb-level detection of triethylamine

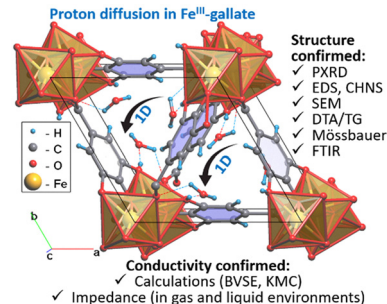
Karnan Sugantharam, Chezhiyan Sumithaa, Balasubramani Saveetha, Paramasivam Jaividhya, Rangasamy Aswapathi and Mani Ganeshpandian\*



12174

The study of the structure and conductive properties of an iron gallate MOF:  $[\text{Fe}^{\text{III}}(\text{C}_7\text{H}_4\text{O}_5)]_n \cdot 2n\text{H}_2\text{O}$ 

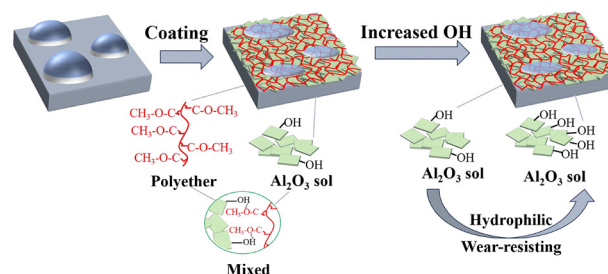
Andrey V. Sokolov, Yelizaveta A. Morkhova,\* Maxim N. Kachalkin and Alexander A. Shindrov



12182

## Different-crystallinity pseudoboehmites for enhancing polyethylene film's anti-fogging performance

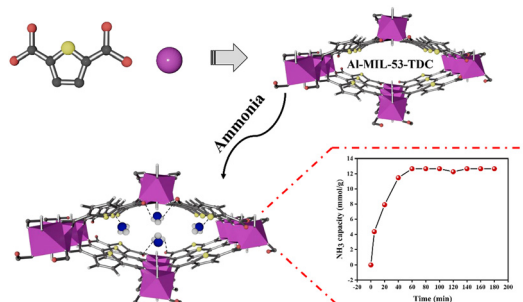
Dandan Jiao, Peng Tian,\* Hongye Qian, Dexin Kong, Chenxi Mu, Hongchang Pang and Junwei Ye





## PAPERS

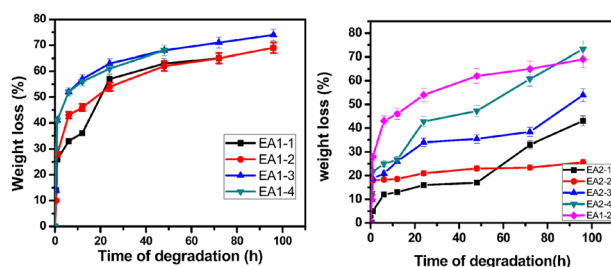
12189



### Ammonia adsorption by Al-MIL-53-TDC: performance evaluation and mechanistic study

Xiaona Wang, Hong Wen, Shenghan Wu, Guowang Xiao, Li Wei\* and Jingai Hao\*

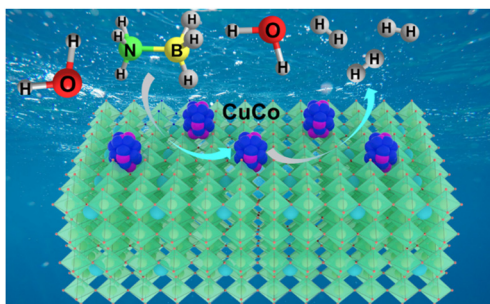
12194



### Performance assessment of coumarin-quinoline hybrid-loaded PVA/sodium alginate composite hydrogel membranes with dual anticancer and antimicrobial drug delivery potential

Elbadawy A. Kamoun,\* Eman Abdelaziz, Shahira H. EL-Moslami, Nihal Almuraikhi, Ezat A. Mersal, Amal F. Dawood, Tamer M. Shawky, Abrar Alanazi, Nashwa Almatrudi, Amr Negm and Ibrahim E. T. El Sayed\*

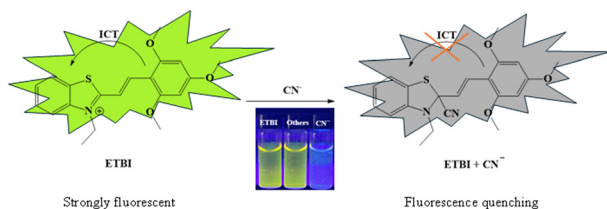
12211



### Construction of CuCo bimetallic nanoparticles on perovskite oxide LaFeO<sub>3</sub> for efficient hydrogen production from ammonia borane hydrolysis

Hai Wang, Yuxin Shao, Xiaoyi Wu, Siyuan Tang, Linlin Xu,\* Yufang Xie, Haotian Qin, Tong Liu\* and Yin Yin\*

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### A "turn-off" ICT-based optical probe for the selective detection of cyanide ions in real samples

Sisay Uota, Daniella Gross, Bor-Jang Hwang, Raymond Butcher, Yousef Hijji, James Wachira, Solomon Tadesse, Jesse Edwards, Kyle Edwards and Fasil Abebe\*

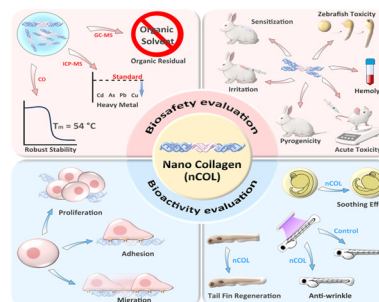


## PAPERS

12231

# Design and evaluation of the biosafety and bioactivity of highly stable nano collagen

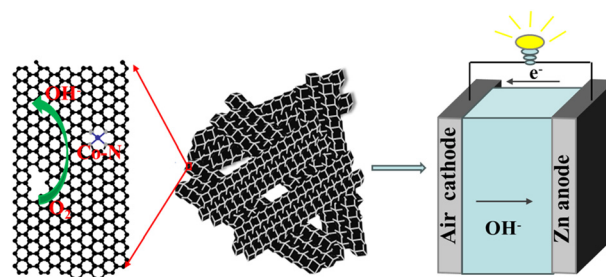
Jingting Zhang, Biyang Ling, Yi Yang, Linyan Yao\* and Jianxi Xiao\*



12243

# Self-template synthesized ZIF-derived polyhedron-connected porous Co–N–C as an oxygen reduction catalyst for Zn–air batteries

Jiaming Cui, Xiaoting Cao, Xi Wang, Jie Liu, Ningyi Yuan\* and Jianning Ding



12252

# Morphology-driven oxygen vacancy engineering in Co<sub>3</sub>O<sub>4</sub> nanostructures for enhanced catalytic conversion of CO<sub>2</sub> to 2-imidazolidinone

Fei Wang, Yonggang Xu, Qiqi Miao, Xuejiao Wei,\* Yihu Ke, Yinwen Gu, Jie Xu and Bing Xue\*

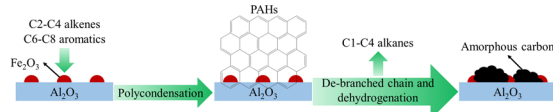


12260

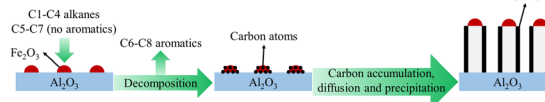
# Insights into CNT synthesis process and mechanism in terms of the composition and transformation of hydrocarbon cracked gas

Siqi Liu, Dongzhe Cui, Xu Hou,\* Changchang Tian, Ao Dong, Li Yin and Jing Huang

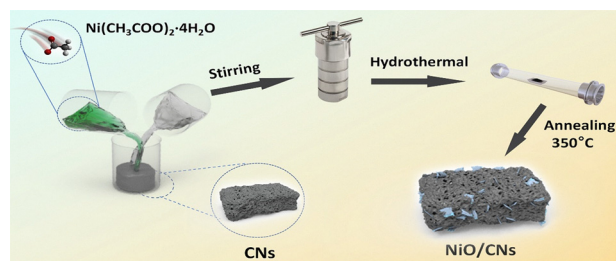
## Reaction pathway for amorphous carbon formation



## Reaction pathway for CNTs formation



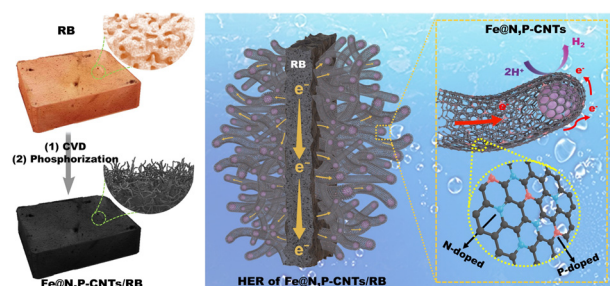
12271



### Engineering crystalline–amorphous interfaces in nickel oxide/porous carbon hybrids for enhanced electrocatalytic water splitting

Zimeng Kong, Junqing Li\* and Dongxuan Guo\*

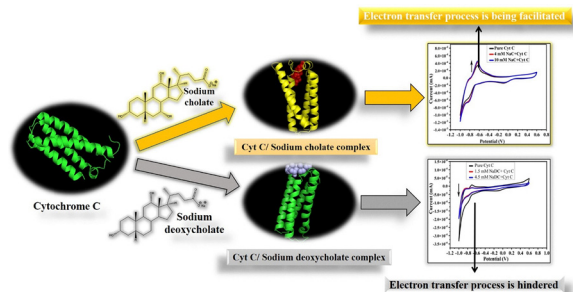
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### Upcycling red brick into a superior monolithic hydrogen evolution electrocatalyst

Zhengguo Zhang,\* Yiming Li, Jiao Zhang, Yaoyao Zhao, Mengjuan Xu, Fang Wang and Shixiong Min\*

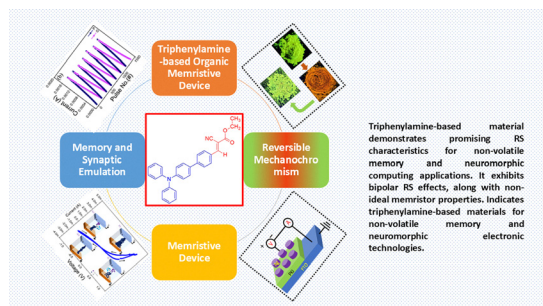
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### Hydrophobicity-directed structural alteration in cytochrome C induced by bile salts: physicochemical, spectroscopic, and atomic force microscopic studies with molecular docking analysis

Raju Sardar, Rajesh Banik, Susmita Chowdhury and Soumen Ghosh\*

12306



### A triphenylamine-based organic memristive device: a promising candidate for memory and synaptic emulation applications

Kishor S. Jagadhane, Neha B. Tadavalekar, Amitkumar R. Patil, Govind B. Kolekar, Rajanish K. Kamat, Tukaram D. Dongale\* and Prashant V. Anbhule\*



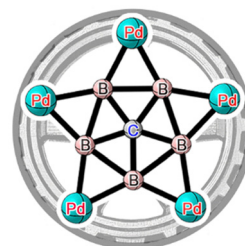


## PAPERS

12315

**CB<sub>5</sub>Pd<sub>5</sub><sup>+</sup>: a boron-based global minimum with a planar pentacoordinate carbon**

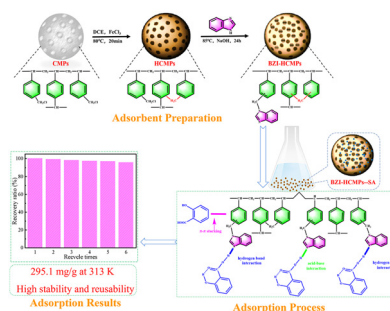
Rui Sun,\* Xiao-Ling Guan, Bo Jin, Xin Wu, Caixia Yuan\* and Yan-Bo Wu\*

Boron-based planar pentacoordinate carbon in global minimum CB<sub>5</sub>Pd<sub>5</sub><sup>+</sup>

12322

**Synthesis, structural characteristics, and adsorption properties of benzimidazole-functionalized hyper-cross-linked resin**

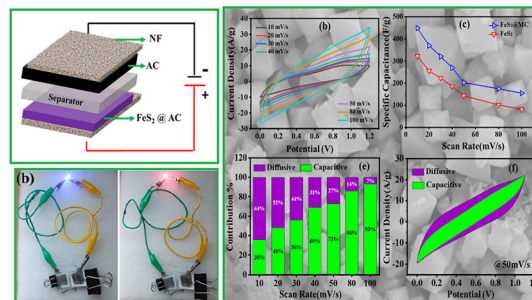
Jixia Li, Yang Tan, Wenkai Chen, Gui Chen,\* Lizhi Chen, Jiahui He, Sitong Wang, Haizhou Zhang and Ye Yuan\*



12331

**Core-shell mesoporous carbon@FeS<sub>2</sub> nanocubes for advanced quasi-solid-state symmetric and asymmetric configurations**

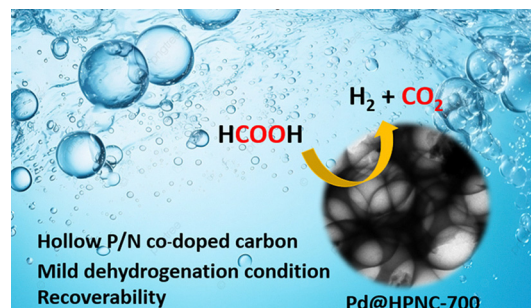
Muzahir Iqbal, Abhijeet Singh, Manawwer Alam, Anil Arya\* and Santosh K. Mahapatra\*



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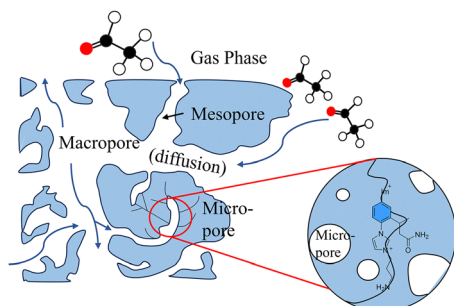
**Hollow P, N dual-doped mesoporous carbon supported Pd nanoparticles for efficient catalytic H<sub>2</sub> generation from formic acid**

Firouzeh Nemati\* and Marzie Sadat Mirhosseini\*



## PAPERS

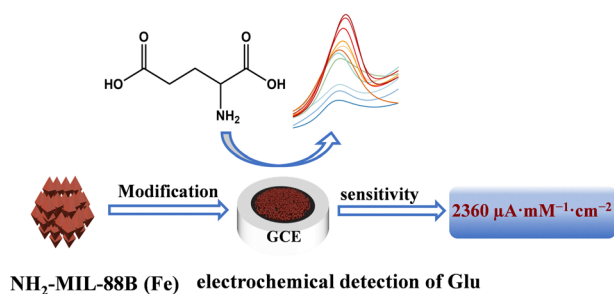
12348



### Novel amino-functionalized poly(ionic liquid)s for enhanced acetaldehyde adsorption: synthesis and performance evaluation

Zhen Yang, Xian Dong, Longchao Liang and Zhuo Chen\*

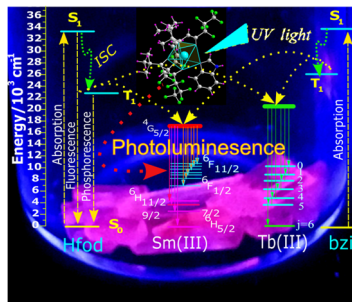
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### An electrochemical sensor based on an amino-functionalized metal–organic framework for the highly sensitive detection of glutamate

Jianbo Tong,\* Qi Hou and Yakun Zhang

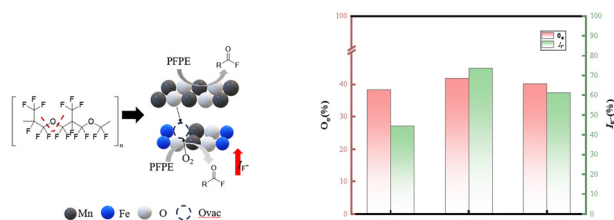
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### Photophysical studies of low-symmetry Sm(III) and Tb(III) complexes reveal remarkable quantum yields

Asgar Ali,\* Zubair Ahmed,\* Khalid Iftikhar and Rahis Uddin\*

12382



### Synergistic effect of a manganese-based catalyst and its performance in catalytic cracking of PFPE

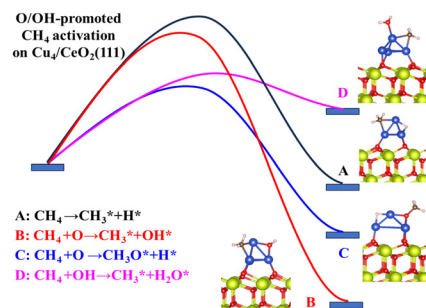
Yang Tang, Jing Zhan, Weifu Xiong, Yanli Liang\* and Xiaoyan Ma\*

## PAPERS

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# A theoretical study on the promotion of methane activation by adsorption of O species on Cu/CeO<sub>2</sub>(111)

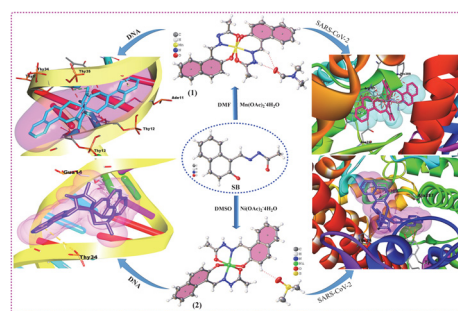
Meng Miao, Yang Xiang, Xin Wei, Qiaoling Xu, Maolin Sha and Qiangqiang Meng\*



12401

# Synthesis and design of manganese and nickel complexes with potential anticancer and antibacterial activities and antiviral properties for therapeutic applications

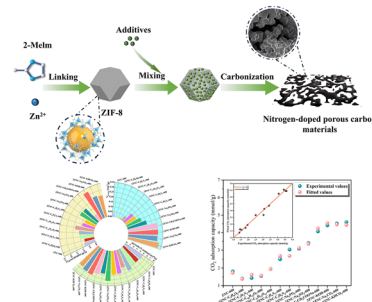
Reyaz Ahmad and Mukesh Choudhary\*



12423

# Structural optimization of ZIF-8-derived porous N-doped carbon materials for effective CO<sub>2</sub> capture

Hao Wang, Jiadi Gao, Xianyi Liu, Zhiguo Zhang, Zhigeng Fan and Yange Suo\*



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# Mechanoluminescence and nonlinear optical properties of a self-assembled piperazine-based supramolecular system: structural insights and computational analysis

Krishna Murthy Potla,\* Suneetha Vankayalapati, Francisco A. P. Osório, Clodoaldo Valverde, Raja Murugesan, Zainab M. Almarhoon, Mahboob Alam and Mohammad Shahidul Islam\*

