

## IN THIS ISSUE

ISSN 1144–0546 CODEN NJCHES 48(9) 3771–4192 (2024)



### Cover

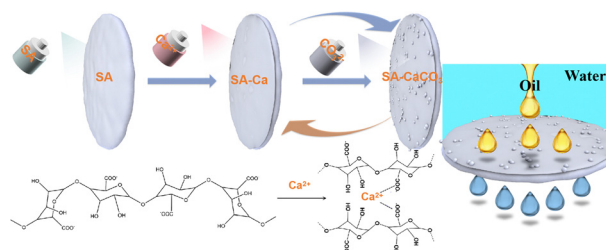
See Zhanjun Liu *et al.*,  
pp. 3793–3803.  
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Wei Shi from  
*New J. Chem.*,  
2024, **48**, 3793.

## COMMUNICATIONS

3785

### Spraying-induced *in situ* growth of $\text{CaCO}_3$ for the modification of membranes for oil/water separation

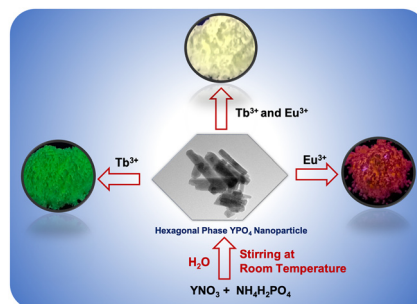
Jiuyun Cui, Jiangping Rui, Jiawei Meng, Fan Wang, Huiqing Feng, Zhijun Ge, Atian Xie\* and Jianming Pan\*



3789

### Room temperature synthesis of highly luminescent $\text{Eu}^{3+}$ and $\text{Tb}^{3+}$ -doped hexagonal-phase $\text{YPO}_4$ nanoparticles with tunable emission

Laishram Peter Singh, Potshangbam Sorodhoni Devi, Aribam Rishikanta Sharma, Laishram Priyabati Devi, W. Rameshwor Singh\* and Raju Laishram\*



# RSC Applied Interfaces

GOLD  
OPEN  
ACCESS

## Interfacial and surface research with an applied focus

### Interdisciplinary and open access



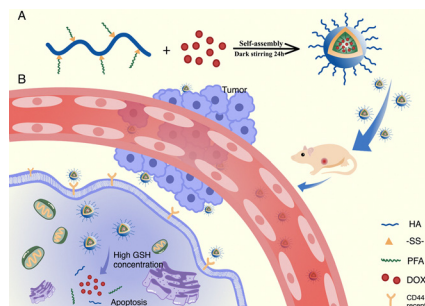
[rsc.li/RSCApplInter](https://rsc.li/RSCApplInter)

Fundamental questions  
Elemental answers

3793

### Reduction-responsive and tumor-targeted polyprodrug nanocarriers for targeting therapy of hepatocellular carcinoma

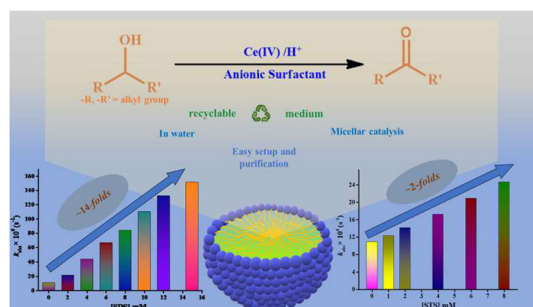
Wei Shi, Xiaoqing Xu, Jinyuan Tian, Ziyi Zhang and Zhanjun Liu\*



3804

### Insights into the micellar catalysed efficient oxidation of 2- and 3-pentanol by cerium(IV) in a greener medium of SDS and STS

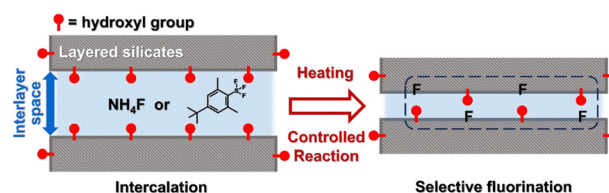
Sandip Kundu, Mousumi Layek, Subhodip Mondal, Mandira Mitra, Priya Karmakar, Sk Mehebub Rahaman, Kalachand Mahali, Animesh Acharjee\* and Bidyut Saha\*



3813

### Selective fluorination of the interlayer surface of layered silicates

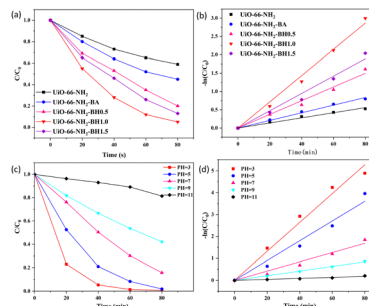
Jeong-Hun Jang, Seung-Min Paek\* and Man Park\*



3818

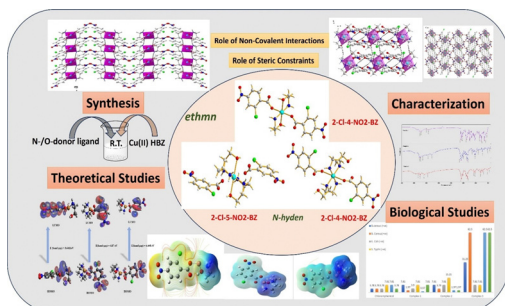
### Defective UiO-66-NH<sub>2</sub> design with enhanced photocatalytic reduction of Cr(VI)

Junjie Ren, Liyue Tao, Zhaoyue Luo and Dongguang Yin\*





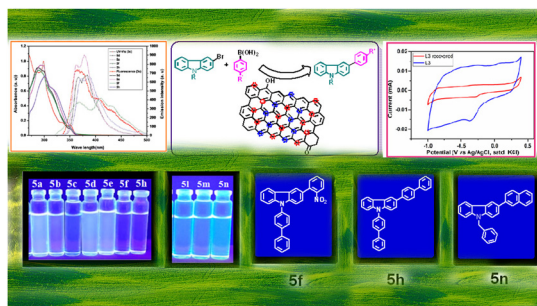
3829



**Synergistic effects of steric constraints and non-covalent interactions in copper(II) chloro-nitro-benzoate complexes: synthesis, structural characterization, theoretical investigations, antimicrobial studies, and molecular docking analyses**

Chetan Chauhan, Santosh Kumar,\* Rajesh Kumar, Anju Saini and Thammarat Aree\*

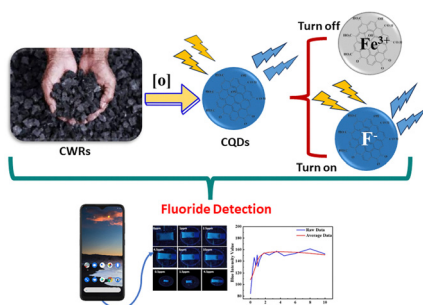
3849



**New conjugated carbazole derivatives: synthesis and photophysical properties catalysed by Pd-Cu@rGO**

Vadla Bhagyalakshmi, Meeniga Indira, Shaik Farheen Banu, Derangula Venkateswarlu, Vasikarla Kamala Prasad, Loka Subramanyam Sarma, Cirandur Suresh Reddy\* and Peddiahgari Vasu Govardhana Reddy\*

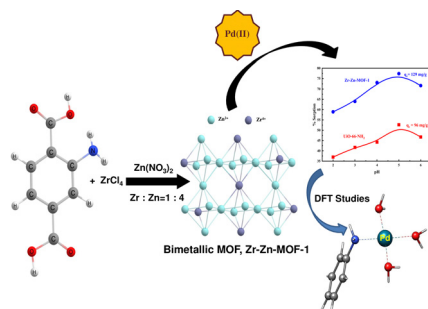
3862



**Detection of fluoride ions using carbon quantum dots derived from coal washery rejects via an on-off-on fluorescence mechanism: a smartphone-based image-processing and machine learning approach**

Anusuya Boruah, Akhil Rajbonshi, Kallol Roy and Binoy K Saikia\*

3877



**Development of highly efficient bimetallic metal organic frameworks for the extraction of Pd(II) from aqueous solutions**

Somnath Sengupta, S. B. Shrikala, Nitin Gumber, A. S. Suneesh, B. Sreenivasulu,\* Manish Chandra and C. V. S. Brahmananda Rao



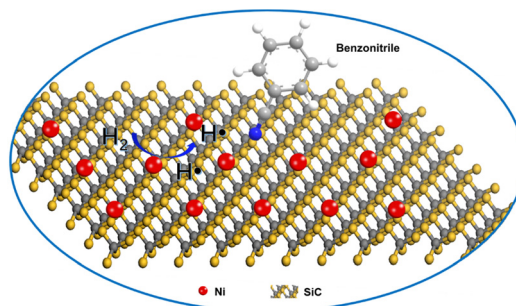


## PAPERS

3892

### Hydrogenation of nitriles to primary amines over a highly dispersed Ni/SiC catalyst without ammonia addition

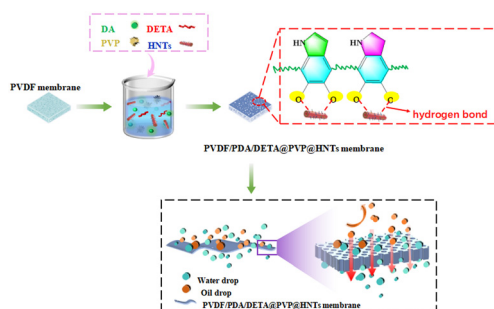
Zhi-Feng Jiao, Zhi-Yuan Zheng, Ji-Xiao Zhao,\*  
Cheng-Du Zhang, Tian-Yu Xu and Xiang-Yun Guo\*



3899

### Preparation of a PVDF–PDA–DETA@PVP@HNT membrane for high efficiency oil–water emulsion separation

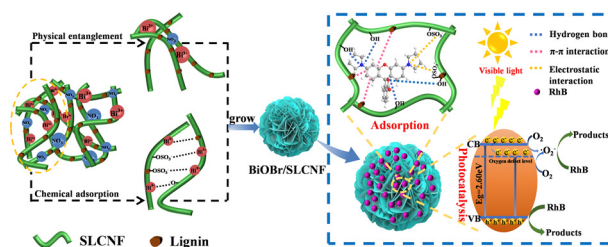
Lijuan Dai, Guoyong Du,\* Qiao Yuan, Chunping Deng,  
Huatao Zhang and Wenxin Ma



3910

### Sulfated lignocellulose nanofibril supported flower-like BiOBr with oxygen vacancies towards absorption–photocatalytic synergetic removal of organic pollutants

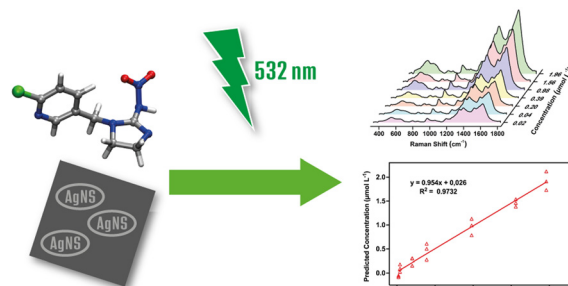
Xin Zhou, Yanming Liu, Xiuyu Liu, Mengxing Xu, Ji Shi\*  
and Qin Huang\*



3924

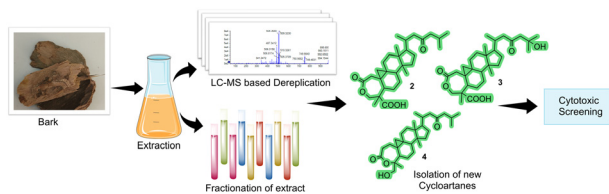
### Suitability study of Ag nanosheet SERS substrates as a screening method for imidacloprid after QuEChERS extraction

Felipe Leyton-Soto, Zachary D. Schultz,  
Rodrigo Ormazábal-Toledo, Domingo Ruiz-León,  
Ady Giordano\* and Mauricio Isaacs\*



## PAPERS

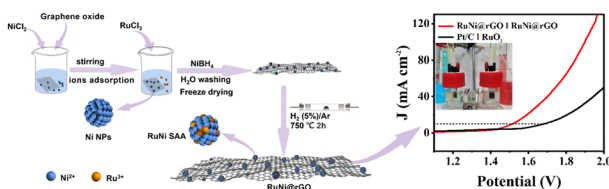
3933



### Isolation of cytotoxic cycloartane triterpenoids from *Dysoxylum malabaricum*

Nivedita Bhardwaj, Vivek Kumar Sharma, Nancy Tripathi, Kavita Pimpre, Rajesh Sonti, G. Ravikanth, Biplob Koch and Shreyans K. Jain\*

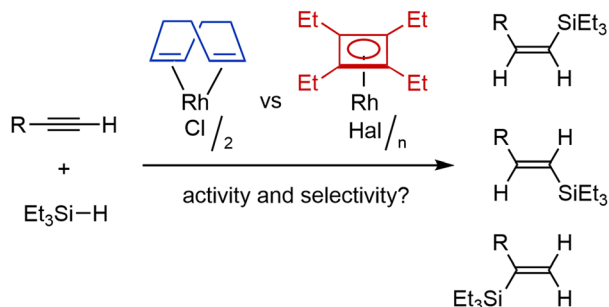
3942



### RuNi single-atom alloy anchored on rGO as an outstanding bifunctional catalyst for efficient electrochemical water splitting

Mengnan Yang, Jie Wang, Peng Dai,\* Xuefeng Tang, Guang Li\* and Li Yang

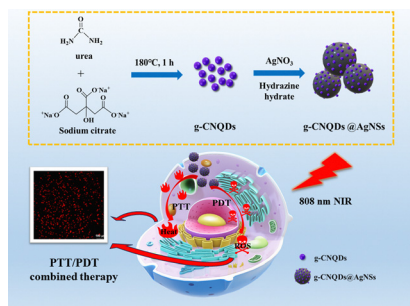
3952



### Catalytic activity of cyclobutadiene rhodium complexes in hydrosilylation and other transformations of alkynes

Tatiana N. Petrushina, Yulia V. Nelyubina, Dmitry S. Perekalin and Nikita V. Shvydkiy\*

3957



### Multifunctional nanocomposites based on graphite-phase carbon nitride quantum dot-silver nanospheres for combined photothermal–photodynamic anti-tumor therapy

Wenjing He, Ying Jin, Baoping Wang, Jie Tan, Wenjia Yan, Hong Xiao, Martin M.F. Choi and Wei Bian\*

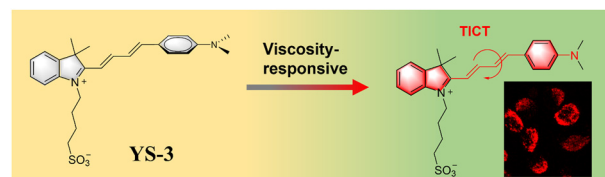


## PAPERS

3966

### A viscosity-sensitive probe based on the structure of indole salt

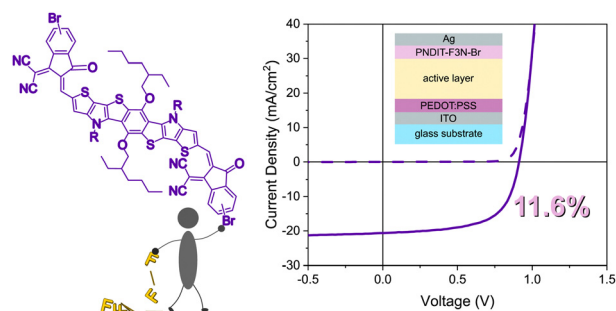
Jiaying Yu, Shen Yuan, Xianfeng Chu, Xiaofan He, Qi Liu, Lucheng Chen, Jinzhong Hu and Zhifei Wang\*



3974

### A brominated M3 based non-fullerene acceptor: synthesis, material and photovoltaic properties

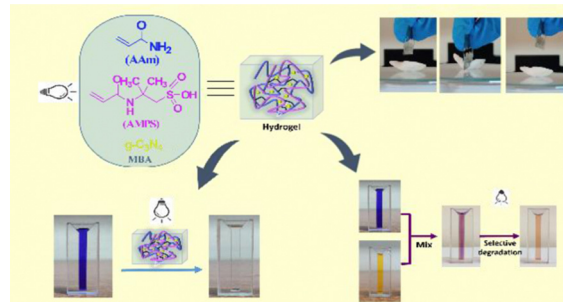
Elena Zuccalà, Suman Mallick, Lea-Marie Habich, Heinz Amenitsch, Thomas Rath\* and Gregor Trimmel\*



3984

### A robust and highly compressible polyacrylamide co-polymer hydrogel developed through g-C<sub>3</sub>N<sub>4</sub> initiated photopolymerisation and its photocatalytic activity towards dye removal

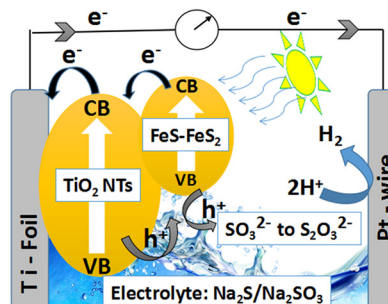
Asfi Ahmed, Priyankamoni Saikia, Priyanka Ray, Riku Dutta and Swapan K. Dolui\*



3998

### Efficient charge separation and transportation using 1D iron-sulfide@titania heterojunctions as photoanodes for improved interface stability and photoelectrochemical activity to produce hydrogen

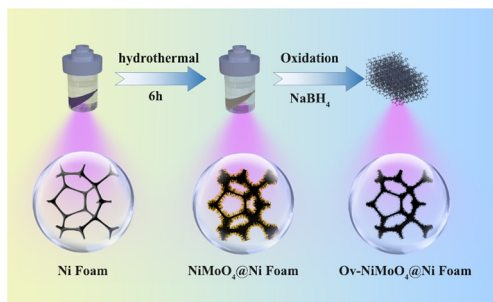
Noor Alam, Fazeelat Rehman, Manzar Sohail and Asad Mumtaz\*





## PAPERS

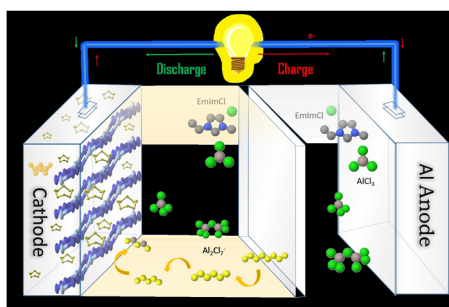
4009



### Oxygen vacancies of NiMoO<sub>4</sub> nanoneedles on Ni foam for high-performance asymmetric supercapacitors

Ruixiang Xu, Limei Zhang, Zhengyang Ji, Ying Liu, Rui Guo\* and Yi Jiang\*

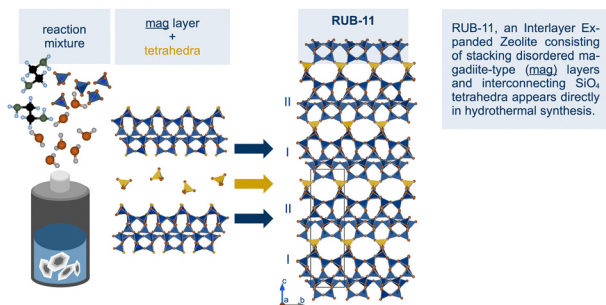
4020



### Enhanced reliability of aluminum–sulfur batteries with cost-effective ionic liquid electrolyte and sulfur/graphite cathode

Mohan Gorle and Vatsala Rani Jetti\*

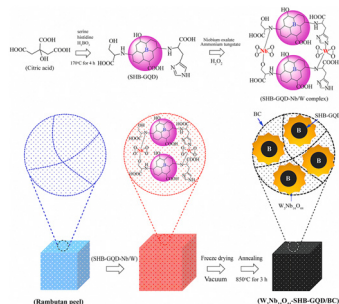
4030



### Synthesis and real structure of RUB-11, a novel high-density silica zeolite based on magadiite layers

Isabel Grosskreuz, Yaşar Krysiak, Hermann Gies, Enrico Mugnaioli and Bernd Marler\*

4043



### Significantly enhanced supercapacitor performance of W<sub>3</sub>Nb<sub>14</sub>O<sub>44</sub> by introducing serine and histidine-functionalized and boron-doped graphene quantum dots

Li Xiaoshan, Li Ruiyi, Liu Xiaohao and Li Zaijun\*

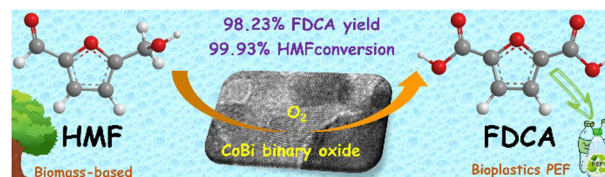


## PAPERS

4054

### Non-precious cobalt–bismuth binary oxide as a superior catalyst for the highly selective aerobic oxidation of 5-hydroxymethylfurfural to 2,5-furandicarboxylic acid in aqueous solvent

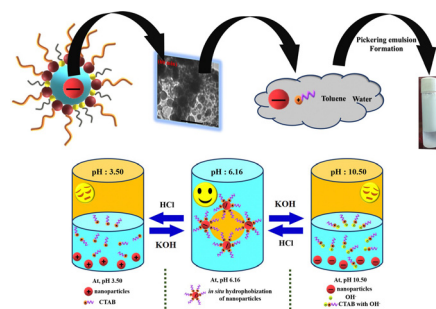
Qian Zhang, Aicheng Chen,\* Weixing Pan and Hu Zhu\*



4063

### A pH switchable Pickering emulsion stabilised by controlled non-conventional lanthanum sulfide nanoparticles, *in situ* hydrophobized with a cationic surfactant

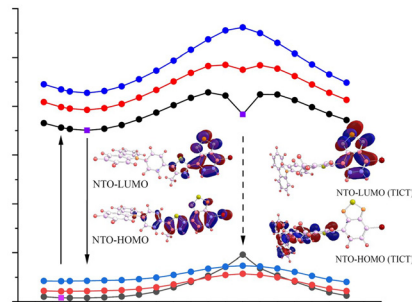
Sk Mehebub Rahaman, Dinesh Joshi, Arnab Patra, Trishna Mandal, Nargis Khatun, Subhendu Dhibar, Rumpa Saha, Ajay Mandal, Dileep Kumar and Bidyut Saha\*



4077

### Twisted-internal charge transfer (TICT) state mechanisms may be less common than expected

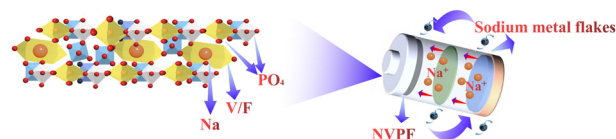
Sara Joulaei-Zonouz, Heather Wiebe, Chris Prüfert and Hans-Peter Looock\*



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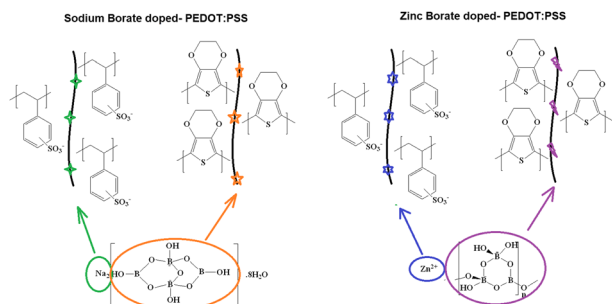
### Enhancing the performance of NaVPO<sub>4</sub>F cathode materials for sodium-ion batteries through graphite incorporation and polyethylene glycol 6000 modification

Mengtao Li, Jinghe Cao and Junke Ou\*



## PAPERS

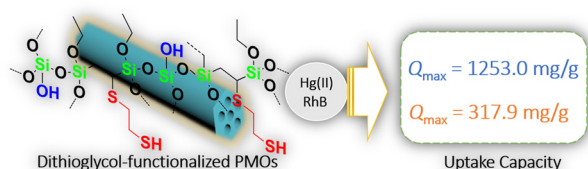
4096



**The effect of zinc and sodium borate doping on the structural, morphological, optical, electrical and electrochemical properties of PEDOT:PSS thin film electrodes for flexible and transparent supercapacitor applications**

Özlem Yağcı,\* Melih Beşir Arvas\* and Süreyya Aydın Yüksel

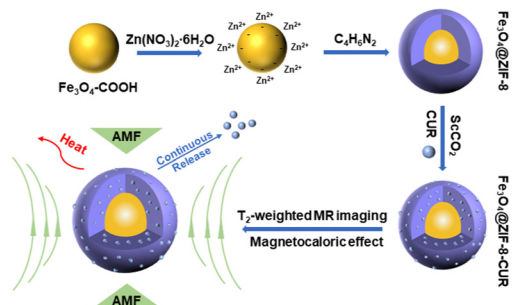
4109



**Synthesis of dithioglycol-functionalized periodic mesoporous organosilicas for the simultaneous removal of mercury ions and organic dyes from water**

Yuanjiang Zhao, Yuhang Liu and Liming Jiang\*

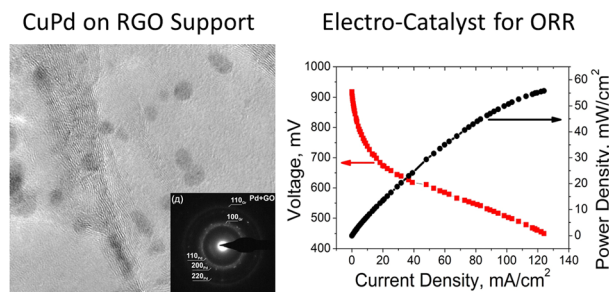
4118



**A novel design of superparamagnetic iron oxide-based metal-organic framework for SSI-assisted drug delivery system**

Jingyi Wu, Qianqian Wang, Zhuang Deng, Shuo Zhang and Zhen Jiao\*

4126



**A copper-palladium/reduced graphene oxide composite as a catalyst for the oxygen reduction reaction**

Vasiliy Brusko, Anna Prytkova, Maria Kirsanova, Iskander Vakhitov, Aigul Sabirova, Dmitrii Tayurskii, Marsil Kadirov\* and Ayrat M. Dimiev\*



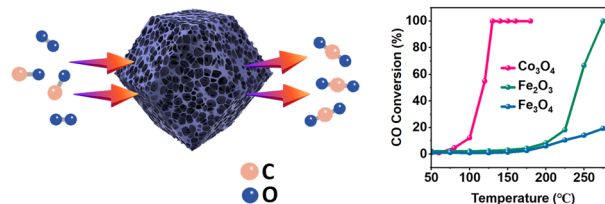


## PAPERS

4137

## Enhanced CO oxidation in porous metal-oxide nanoparticles derived from MOFs

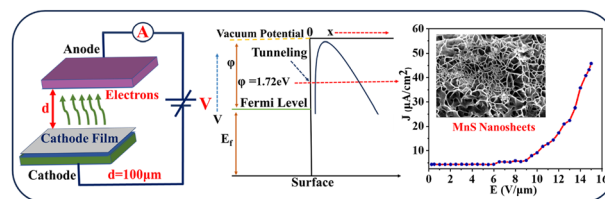
Desong Luo, Lingting Ye\* and Kui Xie\*



4144

## Field emission from vertically oriented 2D manganese monosulfide sheets derived via a chemical route

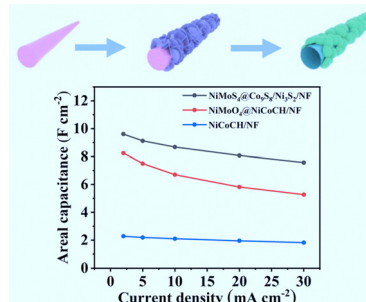
Anima Mahajan, Menaka Jha\* and Santanu Ghosh\*



4155

Integrated design and construction of the  $\text{NiMoS}_4@\text{Co}_9\text{S}_8/\text{Ni}_3\text{S}_2$  hollow core-shell heterostructure for high-performance asymmetric supercapacitors

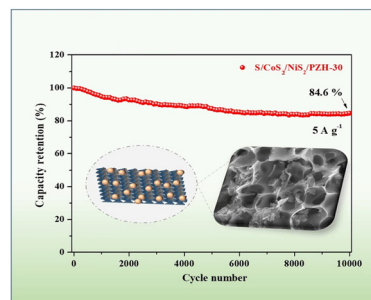
Gaigai Yu, Lei Wu, Shijie Huang, Wenna Zhao\* and Lei Han\*



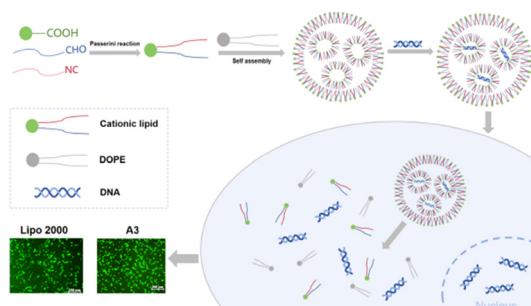
4165

Fabrication of  $\text{S}/\text{CoS}_2/\text{NiS}_2/\text{PZH}$  composite using hydrothermal technology for high-performance supercapacitors

Ya Yuan Zhang, Yan Xue Xue, Fei Fei Dai, Ding Ling Gao, Yu Xiang Liu, Na Qin, Jian Hua Chen and Qian Yang\*



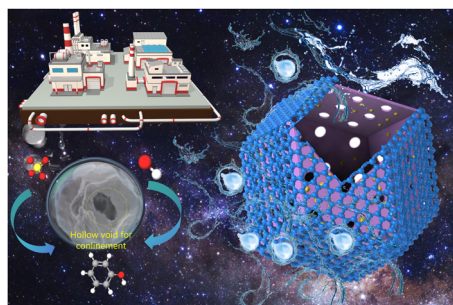
4175



### Cationic lipids *via* multi-component Passerini reaction for non-viral gene delivery

Rong Wang, Jin Li, Jia-Jia Chen, Yu Guo, Yue Hu, Xiao-Qi Yu and Ji Zhang\*

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### Confinement of MOF etching-induced hollow heterostructured cages in the carbon framework for efficient peroxymonosulfate activation

Jie Ding,\* Xue-Qin Liu, Lei Wang and Ying-Bo Zhu

