

## IN THIS ISSUE

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### Cover

See Petr Štěpnička *et al.*, pp. 5107–5119.

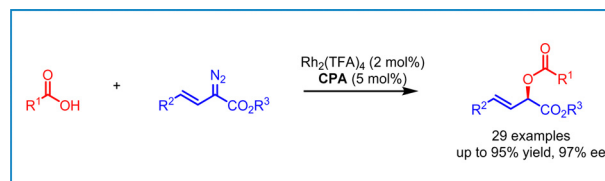
Image reproduced by permission of Petr Štěpnička from *New J. Chem.*, 2024, 48, 5107.

## COMMUNICATIONS

5092

### Enantioselective insertion of vinyl diazoacetates into O–H bonds of carboxylic acids

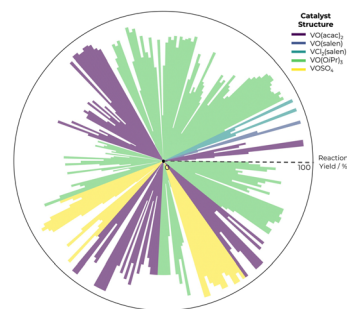
Jiawei Chen, Ying Shao,\* Shengbiao Tang and Jiangtao Sun\*



5097

### Navigating epoxidation complexity: building a data science toolbox to design vanadium catalysts

José Ferraz-Caetano,\* Filipe Teixeira and M. Natália D. S. Cordeiro\*



# RSC Applied Interfaces

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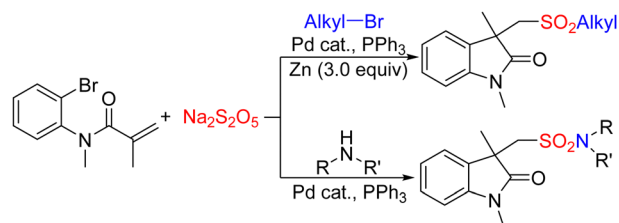
Fundamental questions  
Elemental answers

## COMMUNICATIONS

5101

**Palladium-catalyzed domino cyclization/direct functionalization involving the insertion of SO<sub>2</sub>**

Xinwei Zhang, Yaoyao Lu, Shuoshuo Zhang, Shuizhen Lin, Mengting Chen and Xiaolei Huang\*

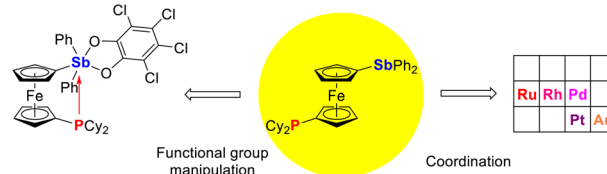


## PAPERS

5107

**Synthesis, reactivity and coordination behaviour of a ferrocene phosphinostibine and intramolecular interactions in its P(v) and Sb(v) derivatives**

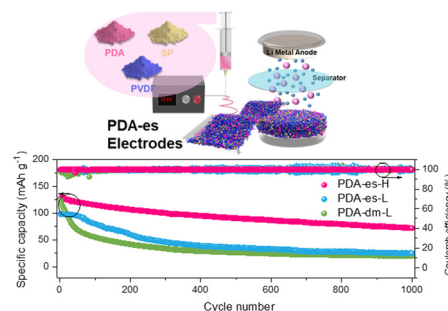
Jakub Antala, Jiří Schulz, Ivana Cisařová and Petr Štěpnička\*



5120

**Electrospun perylene dianhydride electrodes with fine micro-nanostructures for high-performance lithium-organic batteries**

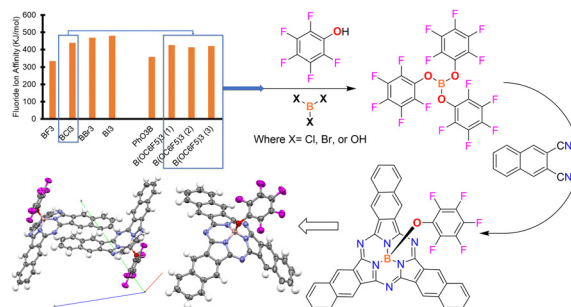
Xi Liu,\* Zhiling He, Junfeng Zhu, Jiru Jia,\* Deyi Liao, Yichao Yang, Longfei Fan, Chan Zhang, Runfeng Xiao and Shaobo Han\*



5127

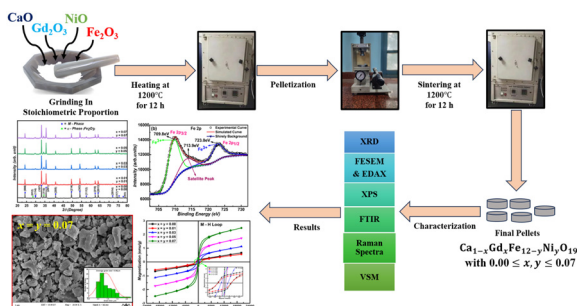
**Triphenyl borates used to avoid the bay-position halogenation of boron subnaphthalocyanines; and for the subnaphthalocyanine, subphthalocyanine and hybrids formation**

Devon P. Holst, Aleksa Dovijarski, Alan J. Lough and Timothy P. Bender\*



## PAPERS

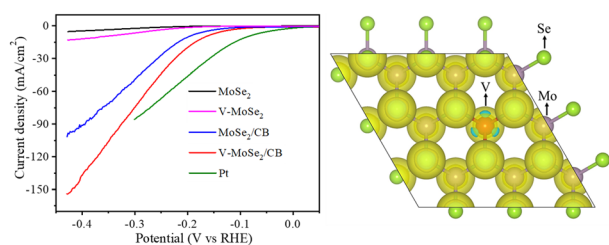
5144



### Influence of Gd and Ni doping on the structural, morphological, and magnetic properties of M-type calcium hexaferrite

Sanjeev Chaurasiya, Sujeet Kumar, Gulzar Ahmad Lone, Ashish Kumar, Kirti Sankhala, Nazima Nazir, Aaqib Rashid, Showket Ahmad Bhat\* and Mohd Ikram\*

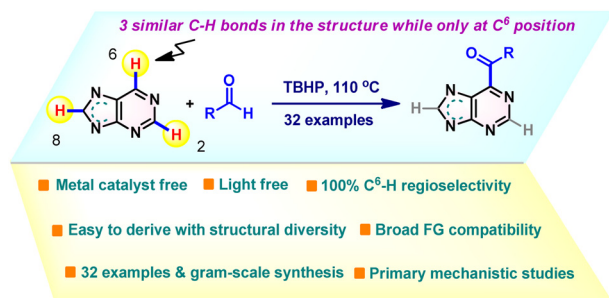
5160



### Confined synthesis of edge-rich V-doped MoSe<sub>2</sub> nanosheets on carbon black for advanced hydrogen evolution reaction

Xianpei Ren,\* Fei Wu, Yonghua Wang, Quanhong Ou and Fei Li\*

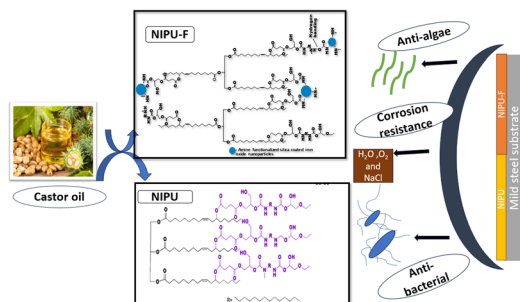
5167



### Metal-free, direct acylation of purines to access C<sup>6</sup>-acylated purine derivatives induced by TBHP via Minisci-type reaction

Chunhui Zou, Mingwu Yu,\* Zhongkai Jiang, Xiguang Liu,\* Yiwen Chen and Lele Zhang

5173



### Biorenewable vegetable oil based nonisocyanate polyurethanes and nanocomposites; formulation, characterisation, biodegradation, anticorrosion and antifouling coatings

Yasmin R. Sulthana, Dinesh K. Chelike and Senthil A. Gurusamy Thangavelu\*

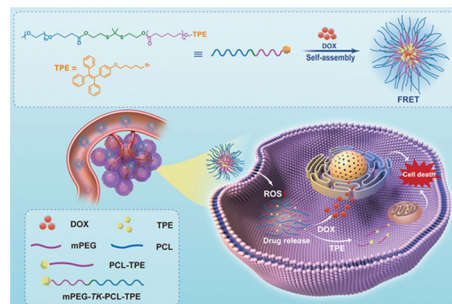


## PAPERS

5186

### ROS-responsive polymeric micelles with aggregation-induced emission effects for drug delivery and cellular imaging

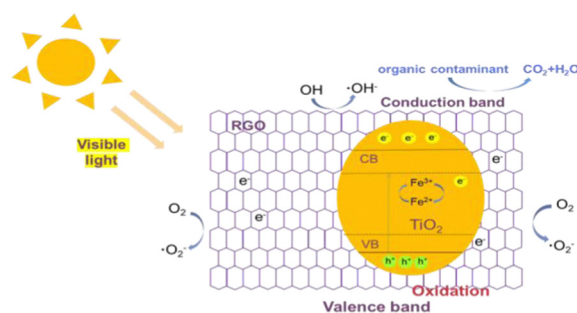
Xiaoyi Song, Fan Yang, Ruixuan Ji, Bin Yang, Yin Lv\* and Zhong Wei\*



5199

### Treatment of MB wastewater with a Fe–RGO/TiO<sub>2</sub>/PTFE photocatalytic composite membrane

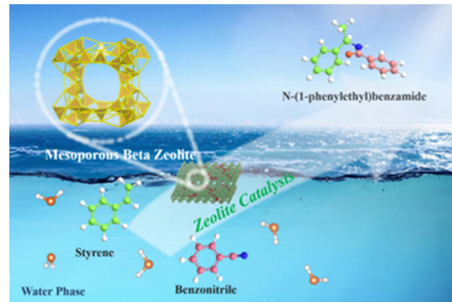
Zijing Wang, Juxiang Song, Yanling Xu, Wenhui Chen, Mai Zhang, Manying Zhang, Xiaofei Fu and Yong Gao\*



5212

### Brønsted acid sites in the Beta zeolite induced highly efficient amidation of styrene in the aqueous phase

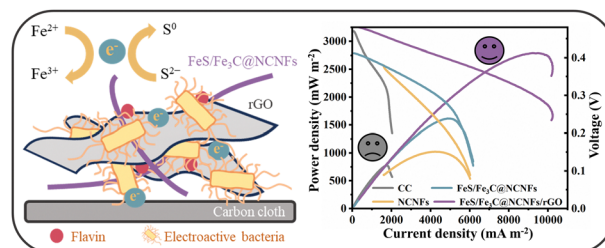
Jiteng Liu, Xueqin Jia, Lei Zhang and Wenqian Fu\*



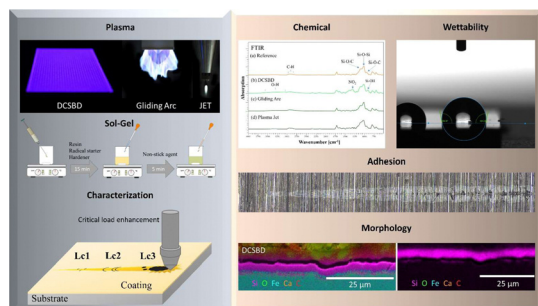
5223

### Carbon nanofiber/graphene hybrids anchoring Fe, N, and S heteroatoms simultaneously enhancing extracellular electron transfer and biofilm adhesion in microbial fuel cells

Tingli Ren, Yuanfeng Liu, Xiaoqiu Lin and Congju Li\*



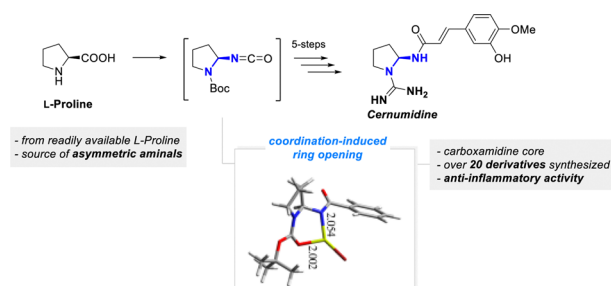
5232



### Modification of silicon-polyurethane-based sol-gel coatings through diverse plasma technologies: investigation of impact on surface properties

Simon Chwatal,\* Frantisek Zazimal, Vilma Buršiková, Reinhard Kaindl and Tomáš Homola

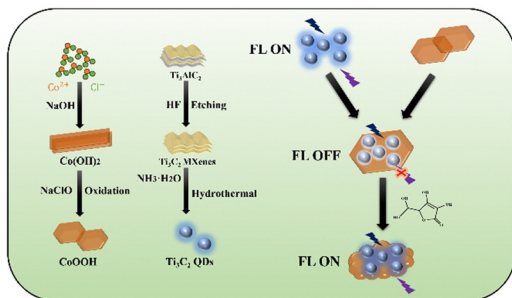
5247



### Exploring the synthesis of aminated guanidine-based molecules: synthesis of cernumidine and analogues, and survey of its anti-inflammatory activity

Rafael Rippel, Flávia Leitão, Miglena K. Georgieva, Rafael Mamede, Clara S. B. Gomes, Catarina Roma-Rodrigues, Alexandra R. Fernandes, Ana Lourenço, Luísa M. Ferreira\* and Paula S. Branco\*

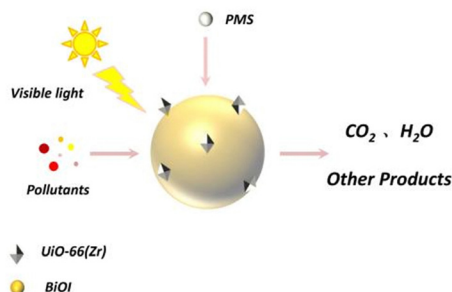
5258



### "On-off-on" fluorescent sensor based on $\text{Ti}_3\text{C}_2$ quantum dots and $\text{CoOOH}$ nanosheets for the detection of ascorbic acid

Feifan Hu, Yong Mao, Jianzhen Huang, Li Wan, Song Liu, Zhiwei Wen and Fanrong Ai\*

5267



### Visible light catalytic degradation of acid orange II via $\text{BiOI}/\text{UiO-66}(\text{Zr})$ activation of peroxymonosulfate

Jiahua Tang, Xianxiong Cheng,\* Junfeng Lian, Xin Liu and Rui Wang

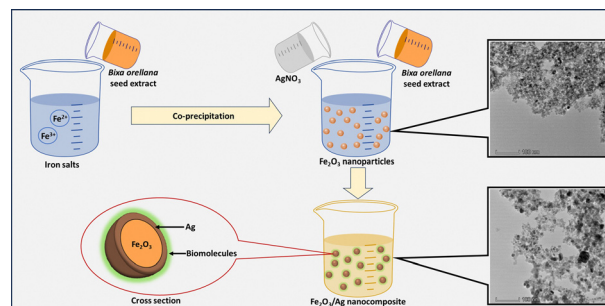


## PAPERS

5278

### Preparation of stable Fe<sub>2</sub>O<sub>3</sub>/Ag nanocomposite particles with catalytic, antioxidant and antibacterial properties

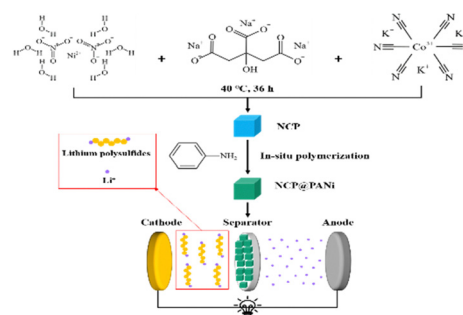
M. Ahasanur Rabbi,\* Most. Bithi Akter, Bijan Mohon Chaki, Md. Abdul Latif, Md. Al-Amin, M. Zia Uddin Rasel, Shamsad Sharmin, Md. Abdurrahim, Mirza Humaun Kabir Rubel and Md. Rowshanul Habib



5289

### A polyaniline-coated Ni–Co Prussian blue analogue nanocube-modified separator for high-performance lithium–sulfur batteries

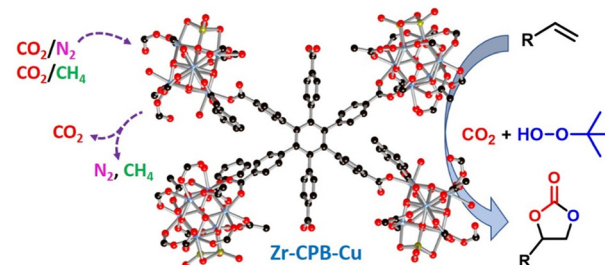
Zilong Li, Yulin Wang, Bin Wang, Haiping Su,\* Yazhuo Shang\* and Honglai Liu



5300

### A copper-functionalized zirconium metal–organic framework for catalytic oxidative carboxylation of olefins and CO<sub>2</sub>

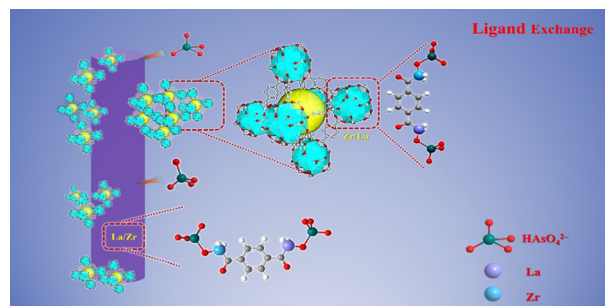
Y. B. N. Tran, Phuong T. K. Nguyen,\* Vinh-Ai Dao and Van-Dung Le



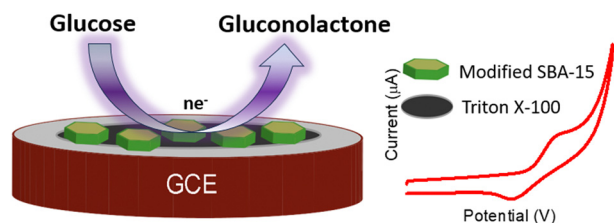
5311

### Efficient arsenate capture using mixed-metal La/Zr-MOF internal complexation

Pengna Huang, Xianjin Qi,\* Xiaoxu Duan, Wenqi Jiang, Nina Yang, Gang Zhi and Jianhua Wang



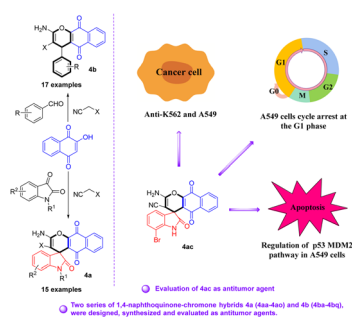
5326



### Selective and sensitive non-enzymatic detection of glucose by Cu(II)–Ni(II)/SBA-15

Athira M. P., Arun R. and Suja Haridas\*

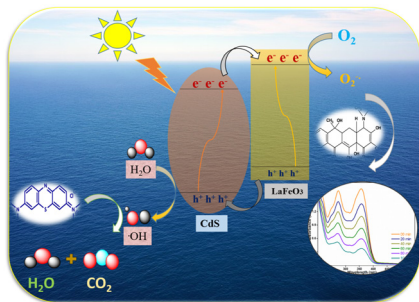
5334



### Design, synthesis, and evaluation of 1,4-naphthoquinone-chromene hybrids as potential anti-K562 and A549 agents

Wen-Hui Zhang, Bo Zhang, Bo-Wen Pan, Xiong-Wei Liu, Zhi-Gang Yin,\* Yu-Zhou Zhuo, Chuan-wen Lei and Ying Zhou\*

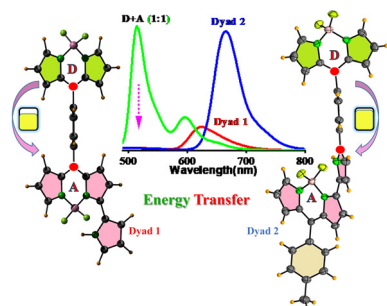
5346



### La/Fe bimetallic MOF-derived p-LaFeO<sub>3</sub>/n-CdS heterojunction: efficient photocatalytic degradation of organic contaminants and adsorption isotherms

Mohammad Saud Athar, Azam Khan, Iftekhhar Ahmad and Mohammad Muneer\*

5362



### Synthesis and properties of covalently linked phenyl bridged 3-pyrrolyl BODIPY–BODIPY dyads

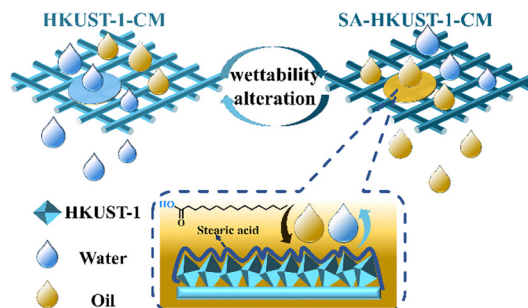
Abani Sarkar, Kanhu Charan Behera, Ankit Tumsare and Mangalampalli Ravikanth\*



5372

### A robust superhydrophobic and superoleophilic SA-HKUST-1 membrane for efficient oil/water mixture separation

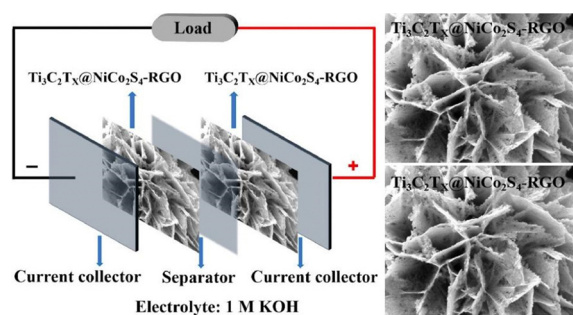
Yuanfeng Fu, Zhenzhong Fan,\* Qingwang Liu, Qilei Tong, Sanyuan Qiao, Li Cai and Xuesong Zhang



5381

### 3D hierarchical $\text{Ti}_3\text{C}_2\text{T}_x\text{@NiCo}_2\text{S}_4$ -RGO heterostructure hydrogels as free-standing electrodes for high-performance supercapacitors

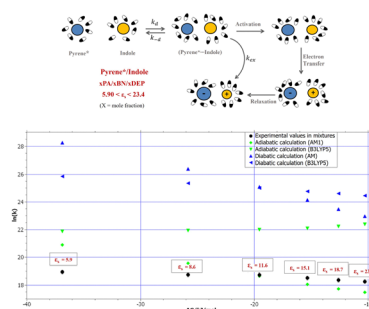
Dashu Yin,\* Wenlei Zhang and Shengcai Hao\*



5392

### The use of a tertiary solvent mixture to study solvent dynamic effects in the photoinduced electron transfer reaction of excited singlet pyrene and indole

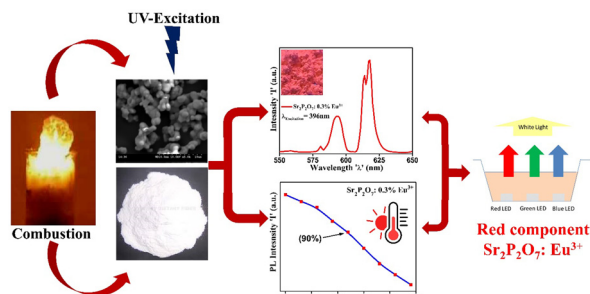
Stephan Landgraf, Guenter Grampp, Kenneth Rasmussen, Thitipone Suwunwong and Patcharanan Choto\*



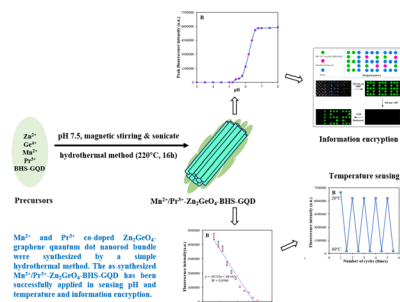
5399

### Thermally stable photoluminescence of $\text{Eu}^{3+}$ doped strontium pyrophosphate: red emitting phosphor with high color purity

Nimesh P. Patel,\* Naresh Degda, Vishwnath Verma, K. V. R. Murthy and M. Srinivas



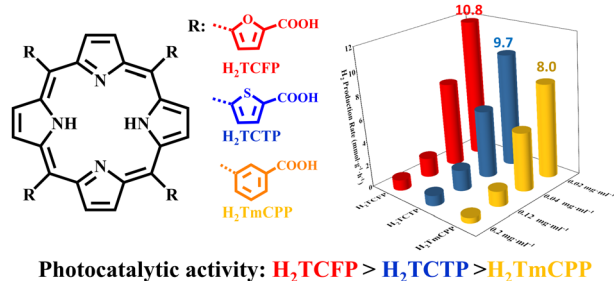
5412



### Synthesis of Mn<sup>2+</sup> and Pr<sup>3+</sup> co-doped Zn<sub>2</sub>GeO<sub>4</sub>-graphene quantum dot nanorod bundles as an optical probe for sensing pH and temperature and for information encryption

Ming Li, Jiadong Xu, Na Wang and Zaijun Li\*

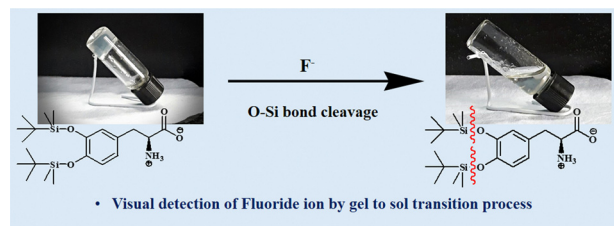
5419



### Improving the photocatalytic activity of porphyrins for hydrogen evolution from water splitting through combined effects inspired by meso-carboxyfuranyl substitution

Zhou Zhou, Guo-Lei Zhang, Yue-Xin Song and Ying-Hui Zhang\*

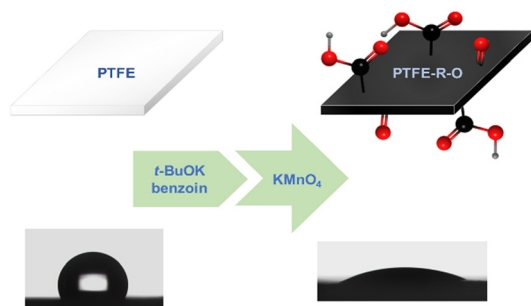
5429



### A stimuli-responsive L-DOPA-based supramolecular gel for the detection of fluoride ion

Subhra Kanti Mandal, Piya Seth and Tanmoy Kar\*

5439



### Achieving durable hydrophilic modification of polytetrafluoroethylene (PTFE) through organic/inorganic hybridization strategy

Kangjia Ding, Lijuan Wei, Yangfeng Guo, Tingting Zhang, Dongfang Wang, Yiyang Xu\* and Qian Li\*

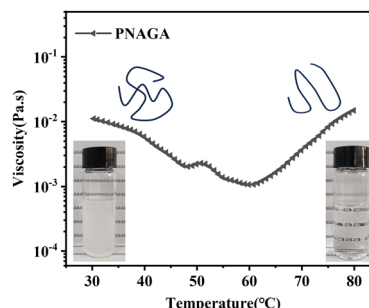


## PAPERS

5447

### Study on the rheological behavior of aqueous solutions of polyacryloylglycinamide

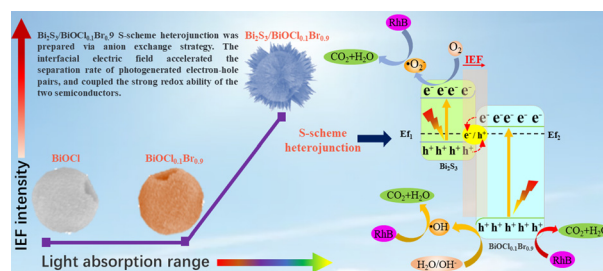
Yuhan Liu, Pan Du, Xinyu Ma, Qiurui Lin, Die Luo and Xianru He\*



5456

### Facile one-step synthesis of a novel $\text{Bi}_2\text{S}_3/\text{BiOCl}_{0.1}\text{Br}_{0.9}$ S-scheme heterojunction photocatalyst with enhanced photocatalytic performance: function of interfacial electric field

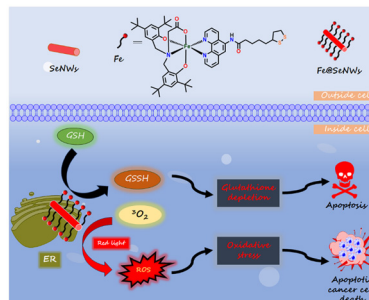
Yanhua Gao,\* Dongfeng Zhang, Hongya Liu, Ying Chen, Yuning Liang, Mingchun Bi, Juan Ren and Zhihua Wang



5465

### A new iron(III) complex-functionalized selenium nanowires (Fe@SeNWs) for potential phototherapeutic applications with red light

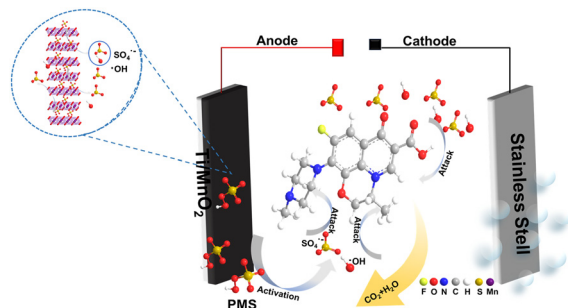
Rintu Bhowmik, Aarti Upadhyay, Maynak Pal, Arpan Bera and Mithun Roy\*



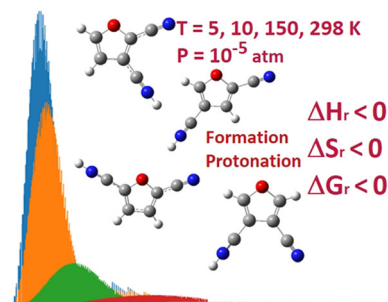
5475

### Insight into electrocatalytic activation of peroxymonosulfate by $\text{Ti}/\text{MnO}_2$ anode via one-step electrodeposition approach toward degradation of levofloxacin

Wenzhi Zhang, Hao Zhang, Guohua Dong,\* Zhuanfang Zhang, Dong-Feng Chai,\* Ming Zhao, Jinlong Li, Han Wu and Xu Hou



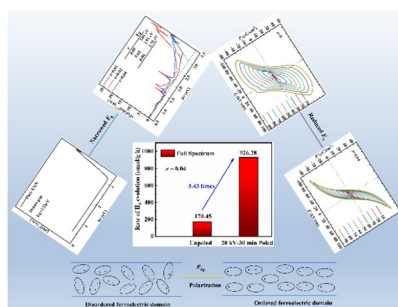
5487



### Spontaneous formation and protonation of dicyanofuran isomers under physical conditions found in interstellar space: quantum chemical insights into thermodynamics and spectroscopy

René Simbizi, Sahar Abdalla, Thierry Bukuru, Pierre Claver Mpawenayo, Manassé Nihorimbere and Godefroid Gahungu\*

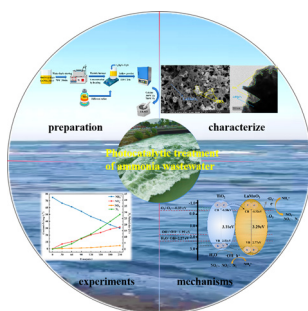
5495



### Enhanced photocatalytic hydrogen production performance of $K_{0.5}Na_{0.5}NbO_3$ -based ferroelectric semiconductor ceramics by Nd/Ni modification at A/B sites and polarization

Qingyi Sun, Changlai Yuan,\* Xiao Liu, Xiaowen Zhang,\* Jingtai Zhao, Changrong Zhou, Guanghui Rao,\* Kaiyuan Su and Dong Wang

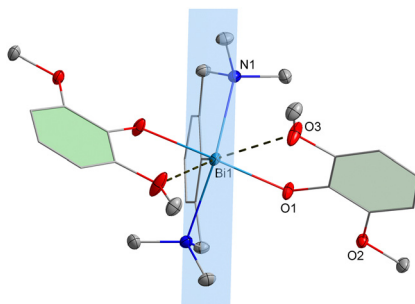
5506



### Photocatalytic degradation of ammonia nitrogen using a Z-type nano- $TiO_2/LaMnO_3$ heterojunction

Ziyi Yang, Jinhai Yuan,\* Xiaopeng Hou, Qi Sun, Xuanlan Luo, Junhong Liu, Haikun Hu, Mi Zhang and Yongquan Wu

5523



### NCN-pincer organopnictogen(III) bis(aryloxides)

Gabriel Duneş and Cristian Silvestru\*

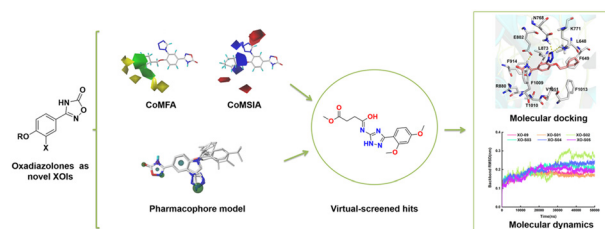


## PAPERS

5530

### Exploration of novel non-purine xanthine oxidase inhibitors based on oxadiazolones by an integrated simulation study

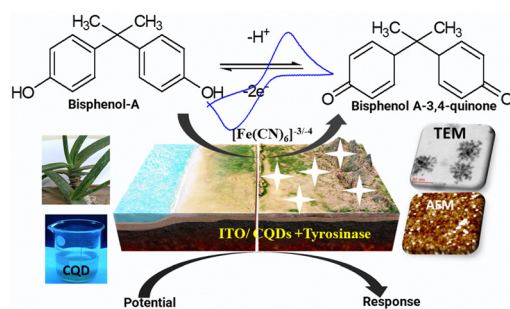
Cheng Xie, Na Zhai, Xiaojiao Zheng, Minghong Jiang, Yilan Zhao, Zhiqiang Xu, Qi Sun\* and Genyan Liu\*



5543

### Aloe vera gel (*Aloe barbadensis miller*) derived self-assembled flower-shaped carbon quantum dot interface for ultra-sensitive electrochemical detection of the endocrine disruptor bisphenol-A

Ankur Srivastava, Kshitij RB Singh, Kharsheed Ahmed, Ravindra Pratap Singh, Mrituanjay D. Pandey,\* Shyam S. Pandey\* and Jay Singh\*



## CORRECTION

5553

### Correction: Synthesis of glycerol carbonate using Li/Mg/K modified zeolite beta: a kinetic study

Priyanka Gautam, Sanghamitra Barman\* and Amjad Ali\*

