

## IN THIS ISSUE

ISSN 1144–0546 CODEN NJCHES 47(38) 17611–18112 (2023)



## Cover

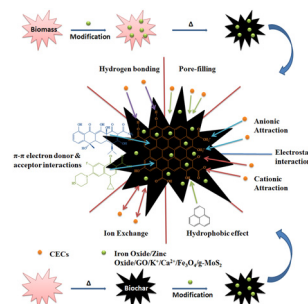
See Juan Hou, Jing Sun, Guang Yang *et al.*, pp. 17649–17656. Image reproduced by permission of Juan Hou from *New J. Chem.*, 2023, 47, 17649.

## PERSPECTIVE

17626

### Recent advances on sustainable removal of emerging contaminants from water by bio-based adsorbents

Prakash V. Bobde, Amit K. Sharma, Ranjit Kumar, Jitendra K. Pandey and Shikha Wadhwa\*

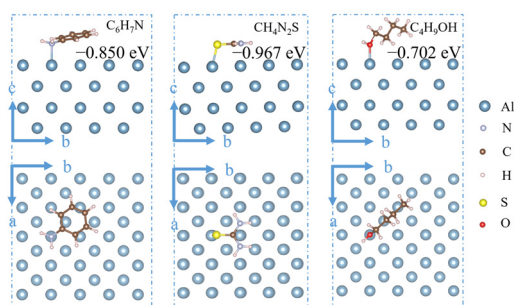


## COMMUNICATION

17645

### Behaviour of organic adsorbable corrosion inhibitors containing N, S, and O functional groups on aluminium in weak acetic acid solutions as simulated HVDC cooling water

Zhen Wang, Kai Xiao, Guoqing Zhang, Xue Han, Zhihong Cai, Zhen Shao, Youping Fan\* and Shengping Wang\*



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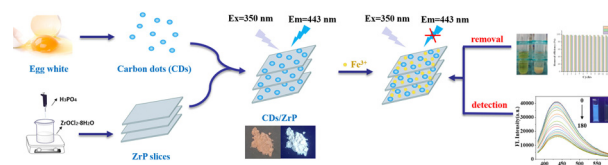
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17649

### Carbon dots/layered zirconium phosphate composites for the adsorption–detection integration of iron ions

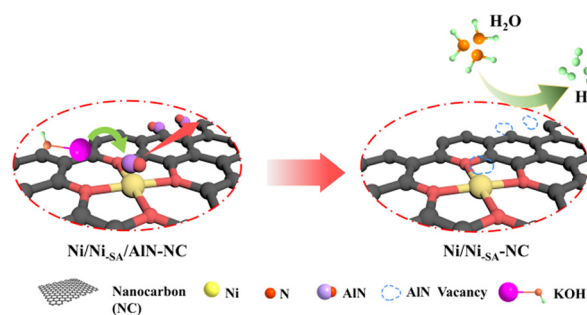
Juan Hou,\* Xu Gao, Guijie Li, Huiling Liu, Qinqin Chen, Jing Sun\* and Guang Yang\*



17657

### Etching-assisted synthesis of Ni/Ni single atom anchored porous graphitic nanocarbon for improved hydrogen evolution reaction

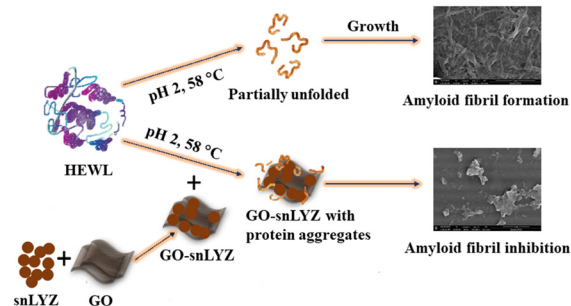
Liangliang Feng,\* Yuhang Li, Changle Fu, Dongming Li, Jianfeng Huang,\* Hongyan Yin, Liyun Cao and Danyang He\*



17666

### Inhibition of hen egg white lysozyme fibrillation by a self-assembled nanostructured lysozyme and graphene oxide conjugate

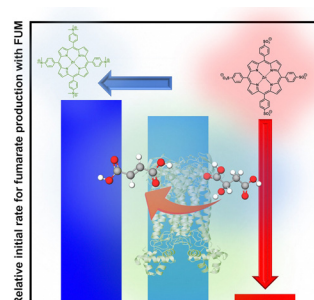
Uma Sankar Mondal and Subhankar Paul\*



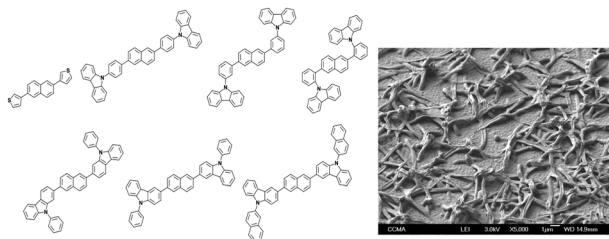
17679

### Effect of water-soluble zinc porphyrin on the catalytic activity of fumarase for L-malate dehydration to fumarate

Mika Takeuchi and Yutaka Amao\*



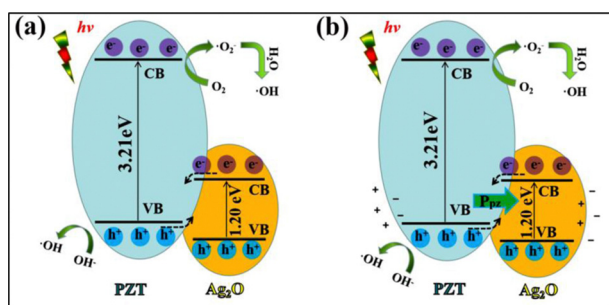
17685



### Directional growth of nanotubes on micelles by soft-template electropolymerization with varying hydrophobicity and strong water adhesion

Diawo Diallo, Abdoulaye Dramé, Alioune Diouf, Aboubacary Sene, Frédéric Guittard and Thierry Darmanin\*

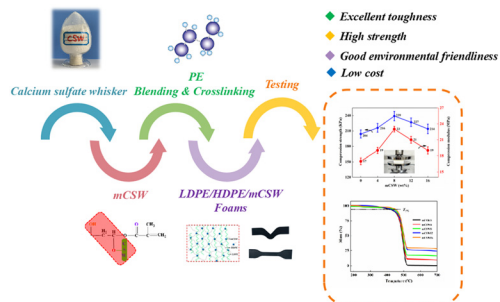
17693



### Piezo-/photo catalysis of the PZT/Ag<sub>2</sub>O heterostructure for dye decomposition under visible light and ultrasonic vibration

Cuina Yang,\* Haifan Zou, Lei Zhao, Jicun Shi and Wenbo Wang\*

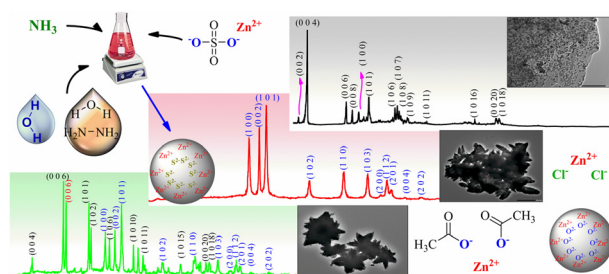
17701



### Reinforcement of the thermal stability and mechanical properties of low-density polyethylene/high-density polyethylene foam using a modified calcium sulfate whisker

Jie Xu, Jinfu Zhong, Dongliang Fu, Guangfu Li and Xiangdong Liu\*

17713



### Investigations on the interconnection between chemical reactions and experimental results of Zn-based quantum dots

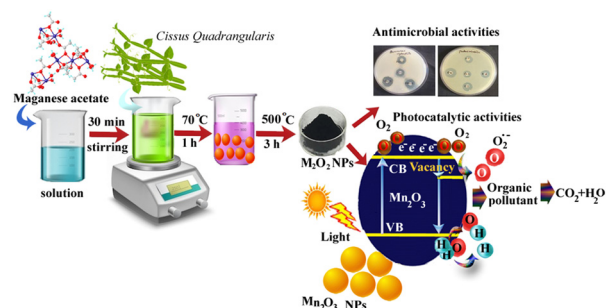
Rahul Singh and Ragini Raj Singh\*



17734

### Green synthesis of orthorhombic $\text{Mn}_2\text{O}_3$ nanoparticles; influence of the oxygen vacancies on antimicrobial activity and cationic dye degradation

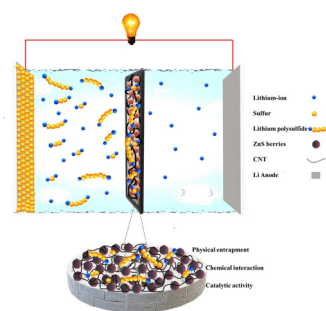
Prammitha Rajaram, Ambrose Rejo Jeice\* and Kumarasamy Jayakumar



17746

### Novel bayberry-like functional separator coating as a physicochemical polysulfide barrier for advanced lithium–sulfur batteries

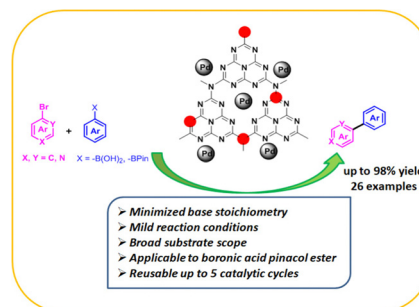
Sreekala Kunhi Kannan, Jithu Joseph and Mary Gladis Joseph\*



17758

### Minimizing base stoichiometry in Pd(0)/g- $\text{C}_3\text{N}_4\text{O}$ catalyzed Suzuki–Miyaura cross-coupling reaction

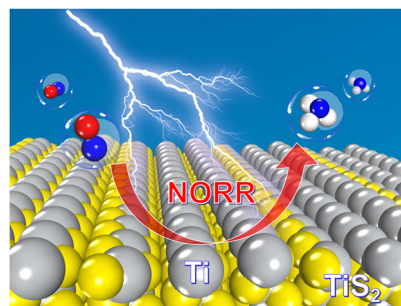
Dipika Konwar, Rakhee Saikia, Risha Kalita, Manash R. Das and Utpal Bora\*



17769

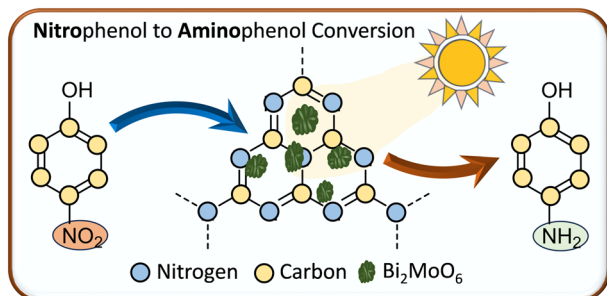
### Electrocatalytic NO reduction to $\text{NH}_3$ over $\text{TiS}_2$ nanosheets

Xiangli Wang,\* Lan Yang, Guike Zhang and Ke Chu





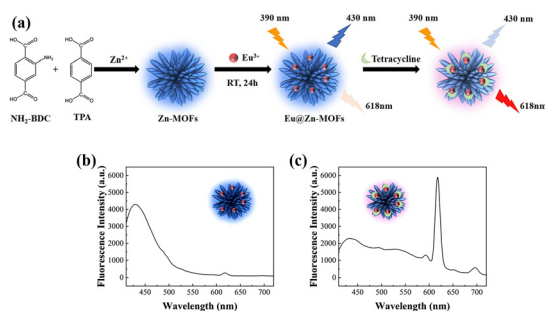
17775



### Photocatalytic reduction of mono, di, and tri-nitrophenols over a $\text{Bi}_2\text{MoO}_6$ /carbon nitride heterojunction

Phyu Phyu Cho, Phyu Phyu Mon, Devthade Vidyasagar, Giridhar Madras and Ch. Subrahmanyam\*

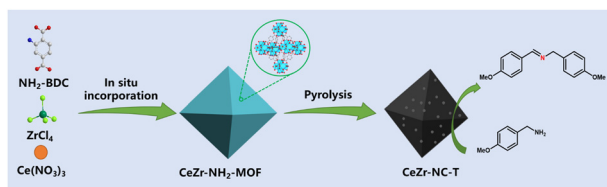
17783



### A post-synthetically modified $\text{Eu@Zn-MOF}$ for ratiometric fluorescence detection of tetracycline in tap water

Renwen Zhang, Lingyan Ma, Wenjing Qi and Chun Liu\*

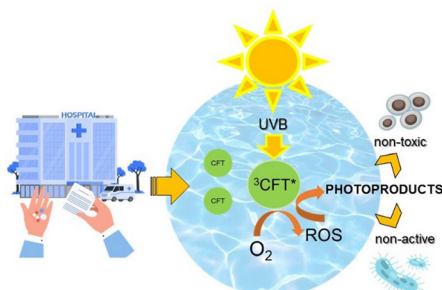
17790



### Enhancing the efficiency of benzylamine oxidative coupling over N-doped porous carbon-supported $\text{CeO}_2$ and $\text{ZrO}_2$ nanoparticles

Jie Chen, Mingyuan Jian, Lei Zhuang, Wenting Lin, Yanghe Fu, De-Li Chen, Weidong Zhu, Guihua Chen and Fumin Zhang\*

17799



### Natural degradation of ceftriaxone promoted by direct UVB light in aqueous media. Mechanistic analysis and cytotoxic effects on a eukaryotic cell line and on bacteria

M. Agostina Biondi, R. Daniel Cacciari, M. Carola Sabini, Mariana B. Spesia, M. Alicia Biasutti, Eugenia Reynoso\* and Hernán A. Montejano\*

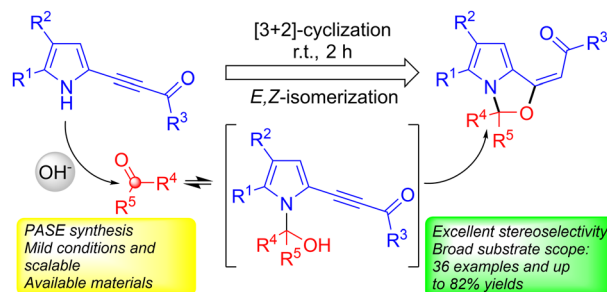


## PAPERS

17810

### Acylmethylidenepyrrolo[1,2-c]oxazoles via [3+2]-cyclization of 2-acylethynylpyrroles with carbonyl compounds

Denis N. Tomilin, Sophia A. Stepanova, Lyubov N. Sobenina, Igor A. Ushakov and Boris A. Trofimov\*



17817

### A thixotropic molecular hydrogel composite composed of polymer hydrogelator and self-doping polyaniline copolymer for electrochromic and glucose sensing applications

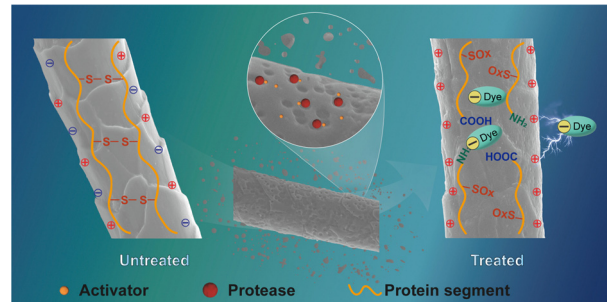
Yutaka Ohsedo\* and Mayumi Sasaki



17824

### The effect of a novel catalytic system with Savinase 16L and an organophosphine compound on the shrink-proofing and dyeing properties of wool

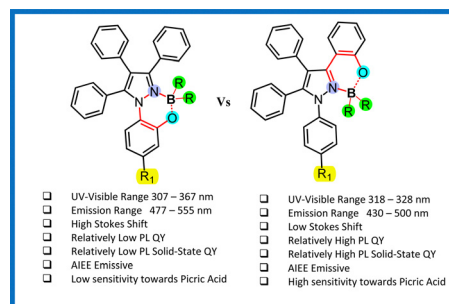
Le Wang,\* Zhixin Duan, Jinbo Yao,\* Liyan Liu, Pengfei Fei, Zhifeng Yan, Youbo Di, Hua Wang and Jianjun Lu



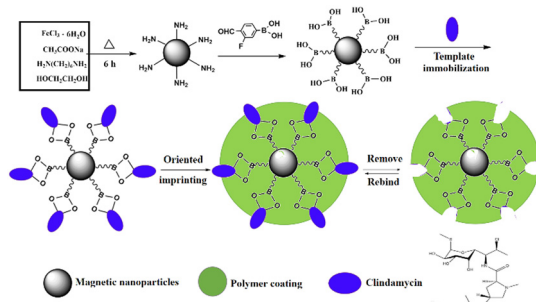
17835

### Synthesis, structural, and photophysical properties of pyrazolyl bis(pentafluorophenyl)boron complexes

Anna Chandrasekar Murali, Preeta Pratakshya, Pratiksha Patel, Prakash Nayak, Saravanan Peruncheralathan and Krishnan Venkatasubbaiah\*



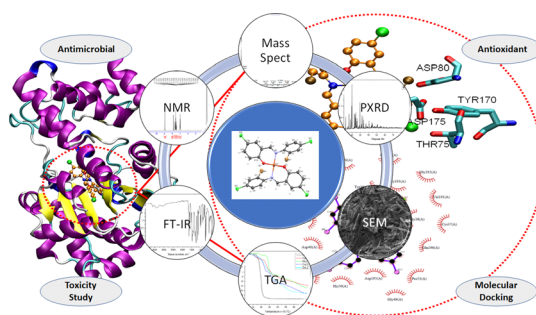
17843



### Boronate affinity-based clindamycin-imprinted magnetic nanomaterials for rapid, efficient and selective extraction and determination of clindamycin in animal-derived food

Yansong Zhang, Zixin Zhang, Yihan Ding, Daojin Li\* and Shuangshou Wang\*

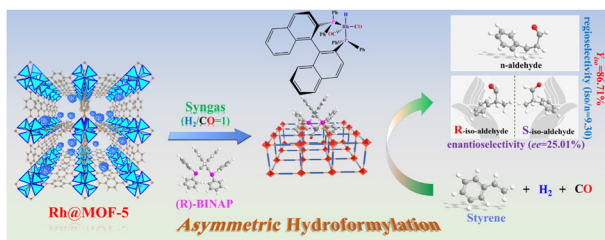
17853



### Synthesis, characterization, biological evaluation, DFT and molecular docking studies of (Z)-2-((2-bromo-4-chlorophenyl)imino)methyl)-4-chlorophenol and its Co(II), Ni(II), Cu(II), and Zn(II) complexes

Ibrahim Waziri,\* Hlonpho M. Masena, Tunde L. Yusuf, Louis-Charl C. Coetzee, Adedapo S. Adeyinka and Alfred J. Muller

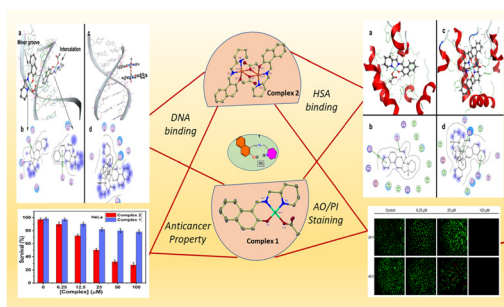
17871



### Unique phosphine ligand synergy in asymmetric hydroformylation of styrene over the Rh@MOF-5 heterogeneous catalysis system

Mengchuan Ma, Chao Zhang,\* Weiping Li, Yong Tao, Li Zhou, Lu Li, Zhenmei Guo and Zhiguo Lv\*

17881



### DNA/HSA binding and anticancer properties of pendant acetate bearing mono-nuclear Ni(II) and bridging acetate bearing di-nuclear Cu(II) Schiff base complexes: an experimental and molecular docking study

Biman Ari, Manik Das, Paola Brandao, Somali Mukherjee, Atish Dipankar Jana, Biplab Koley, Soumik Laha, Md. Maidul Islam, Indranil Choudhuri, Nandan Bhattacharya, Bidhan Chandra Samanta, Nitin Chattopadhyay\* and Tithi Maity\*

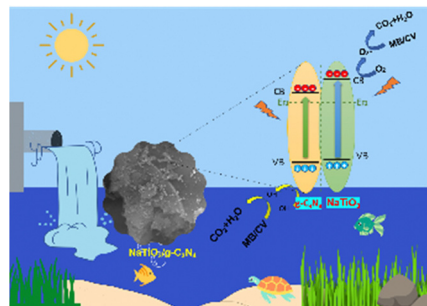




17897

## A visible light-driven $\text{NaTiO}_3/\text{g-C}_3\text{N}_4$ heterojunction photocatalyst for ultra-fast organic dye degradation

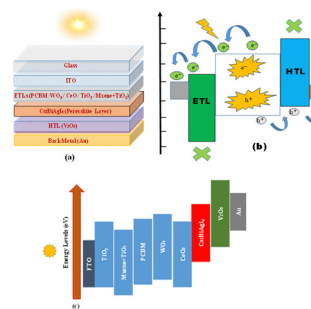
Amritha V. K. and Sushmee Badhulika\*



17908

## Efficiency enhancement of perovskite solar cell devices utilizing MXene and $\text{TiO}_2$ as an electron transport layer

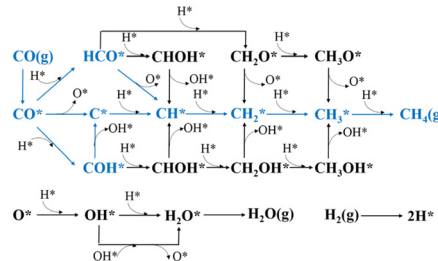
Sagar Bhattarai,\* M. Khalid Hossain,\* G. F. Ishraque Toki, Rahul Pandey,\* Jaya Madan,\* D. P. Samajdar, Safa Ezzine, Lamia Ben Farhat, Mohd Zahid Ansari,\* Shaik Hasane Ahammad and Ahmed Nabih Zaki Rashed\*



17923

## Theoretical study coupling DFT calculations and KMC simulation of CO methanation on $\text{Ni}(111)$ and $\text{Ni}_3\text{Fe}(111)$

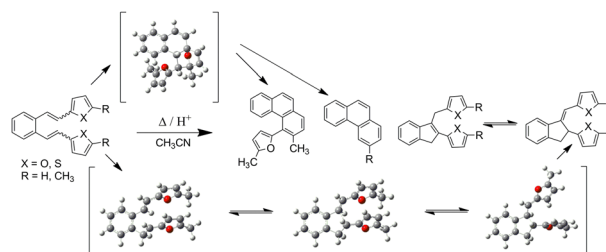
Yingzhe Yu, Peng Ji, Weiwei Zhang, Kuiwei Yang and Minhua Zhang\*

Reaction networks for CO methanation<sup>†‡</sup>

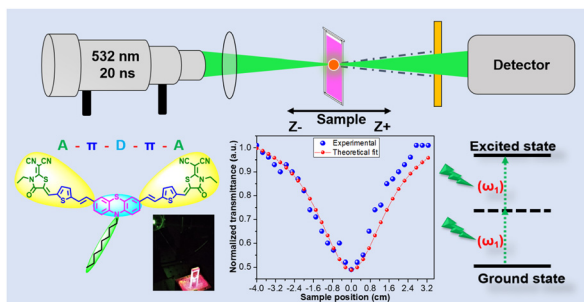
17937

## Mechanistic insights into the thermal transformations of heterocyclic *o*-distyrylbenzenes: an experimental and computational study

Vilma Lovrinčević, Dragana Vuk,\* Irena Škorić and Ines Despotović\*



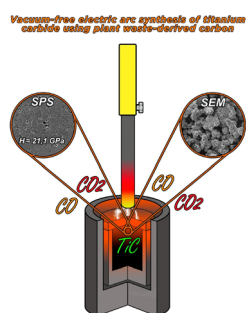
17951



### Butterfly wing type new push-pull A- $\pi$ -D- $\pi$ -A organic fluorophore: synthesis, photophysical, DFT and nonlinear optical property studies

Ananthan Alagumalai, Soumya Shaswati Sahu, Upakarasamy Lourderaj, Sai Muthukumar Vijayasayee,\* Ananthanarayanan Krishnamoorthy\* and Senthil A. Gurusamy Thangavelu\*

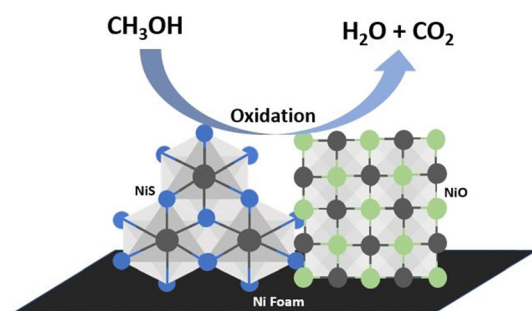
17963



### Vacuum-free electric arc synthesis of titanium carbide using plant waste-derived carbon

Arina Gumovskaya,\* Alexander Pak, Stanislav Yankovsky, Artur Nassyrbaev, Dmitriy Nikitin and Ulyana Komkina

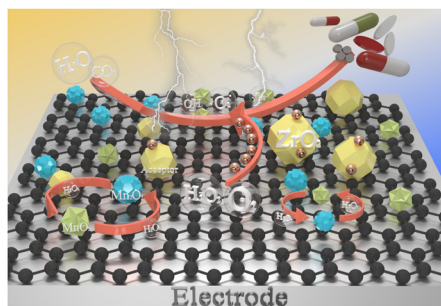
17970



### Fabrication of a nickel sulfide/nickel oxide heterostructure for efficient electrochemical oxidation of methanol

Faria Sheikh, Aleena Arshad, Fareeha Marriam, Zubair Ahmad, Ali Haider, Mudassir Iqbal and Muhammad Adil Mansoor\*

17984



### Controllable growth on nano-graphite-supported ZrO<sub>2</sub>-MnO<sub>x</sub> bimetallic oxides for electrocatalytic antibiotic degradation: mechanism to boost the Mn<sup>3+</sup>/Mn<sup>4+</sup> redox cycle

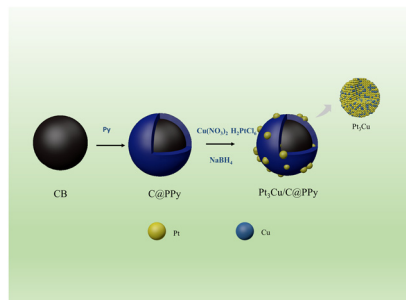
Si Duan, Guihong Lan,\* Xiaoting Yang, Yongqiang Liu, Haiyan Qiu, Bo Xu, Yuan Gao and Zhuang Xie



17999

### Preparation and properties of polypyrrole-modified carbon black supported Pt<sub>3</sub>Cu alloy catalyst

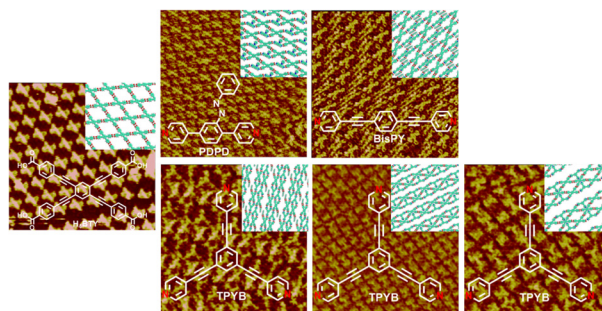
Jinghua Yu, Yueling Guo, Yajie Dai, Ziren Jin, Zhiqian Wang, Fanghui Wang and Hong Zhu\*



18010

### Abundant two-dimensional hydrogen-bonded co-assemblies of tetracarboxylic acid derivatives and pyridine derivatives studied by means of scanning tunneling microscopy

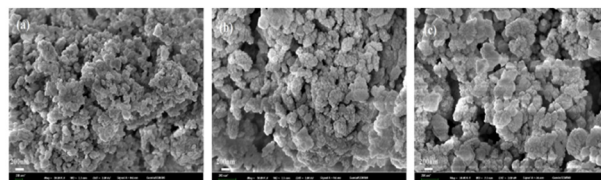
Peng Lei, Wendi Luo, Ke Deng, Bin Tu, Xunwen Xiao,\* Qiaojun Fang,\* Chen Wang\* and Qingdao Zeng\*



18018

### Preparation of H $\beta$ zeolites with hierarchical pores and a study on the isomerization performance of $\alpha$ -pinene

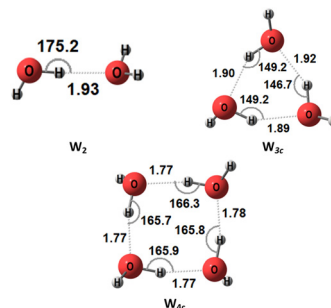
Yanqi Chen, Wenxing Wu, Naiwang Liu, Li Shi and Xuan Meng\*



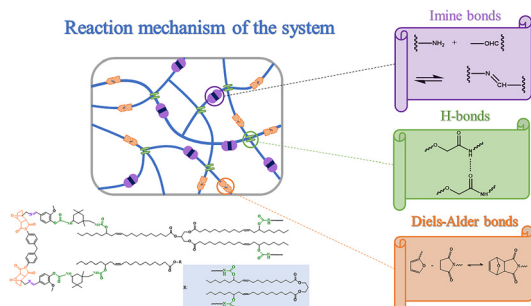
18027

### Reactivity of hydrogen-bonded complexes of water, methanol, phenol and methyl amine

Alexander Samuilov and Yakov Samuilov\*



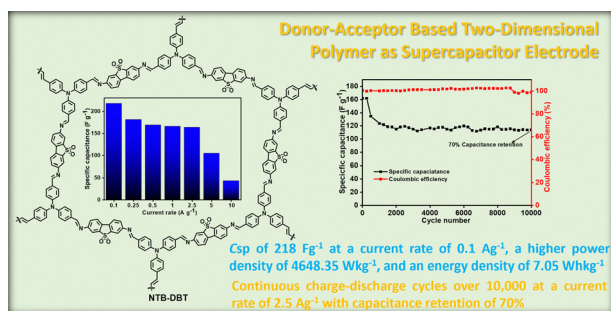
18039



### Self-healing, recyclable, thermally adaptive shape memory functional biopolymers based on multiple dynamic covalent bonds and hydrogen bonds derived from castor oil and vanillin

Yuan Nie, Mei Li, Shouhai Li,\* Mingtao Lin, Na Yao, Tianxiang Deng, Xiao Feng, Xiaohua Yang, Haiyang Ding and Lina Xu

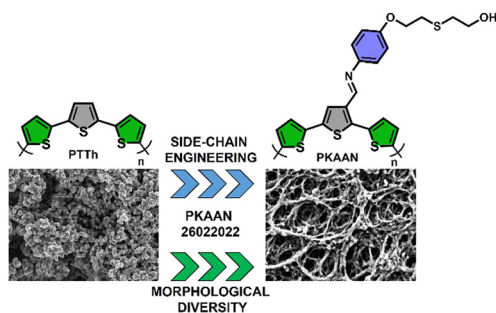
18049



### Donor-acceptor-based two-dimensional polymer as a supercapacitor electrode with long cycling stability

Bhagyasree T. M., Priyanka Pandinhare Puthiyaveetil, Viksit Kumar, Kiran Asokan, K. Sreekumar and Sukumaran Santhosh Babu\*

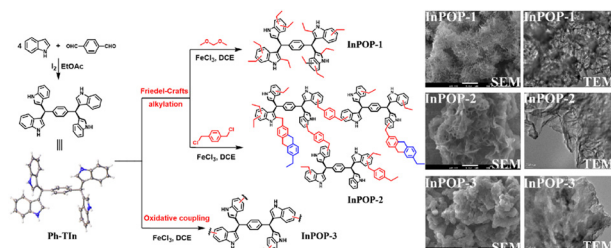
18055



### Improvement of morphological structure and electrochemical charge storage performance of a new poly(terthiophene)-based conducting film through side-chain engineering

Deniz Yiğit

18070



### Three novel indole-bearing porous organic polymers for efficient iodine capture from both vapor and organic phases

Jingwen Yu, Luna Song, Yeshuang Wang, Haowen Li, Jiawen Liu, Mengmeng Wu,\* Yu Feng and Jie Mi\*

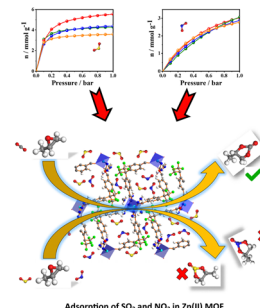


## PAPERS

18086

### Computer modelling of trace SO<sub>2</sub> and NO<sub>2</sub> removal from flue gases by utilizing Zn(II) MOF catalysts

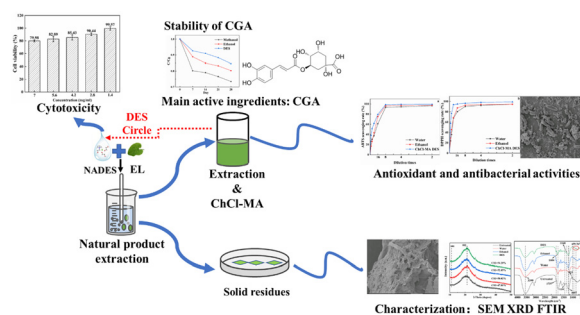
D. Muthukumar, C. M. Nagaraja, Michael Badawi\* and Renjith S. Pillai\*



18096

### Natural deep eutectic solvent extraction of chlorogenic acid from *Eucommia* leaves: high extractability, stability, antibacterial, and antioxidant activity

Yuan Zhu, Hang Li, Peng-Wei Xu, Xiao-Fan Yuan\* and Bing Zhao\*



## EXPRESSION OF CONCERN

18108

### Expression of concern: Solar-driven photodegradation of 17- $\beta$ -estradiol and ciprofloxacin from waste water and CO<sub>2</sub> conversion using sustainable coal-char/polymeric-g-C<sub>3</sub>N<sub>4</sub>/RGO metal-free nano-hybrids

Amit Kumar,\* Ajay Kumar, Gaurav Sharma, Mu. Naushad, Renato Cataluna Veses, Ayman A. Ghfar, Florian J. Stadler and Mohammad Rizwan Khan

## CORRECTION

18109

### Correction: Green synthesis and characterization of Ag nanoparticles in a phytic acid/ascorbic acid/sodium hydroxide system and their application in the electrochemical detection of H<sub>2</sub>O<sub>2</sub>

Baolong Niu,\* Hong Wang, Yanwei Zhang, Bin Nie, Huifang Wang, Xiaojie Lian and Wenfeng Li\*

