

## IN THIS ISSUE

ISSN 1144-0546 CODEN NJCHES 49(39) 16895-17380 (2025)



### Cover

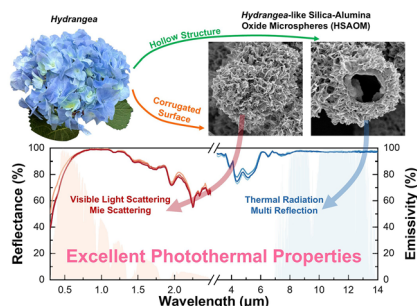
See Chinna Ayya Swamy P et al., pp. 16914–16924. Image reproduced by permission of Chinna Ayya Swamy P from *New J. Chem.*, 2025, 49, 16914.

## COMMUNICATION

16909

### Preparation and photothermal properties of bio-inspired *Hydrangea*-like silica-alumina oxide microspheres

Rui Sun, Yuzhi Zhang,\* Xinyu Wang, Hongyu Gu, Binghao Wang, Jiaqi Wang, Yunsong Zhao, Xinchang Han, Jiayu Ma and Lixin Song

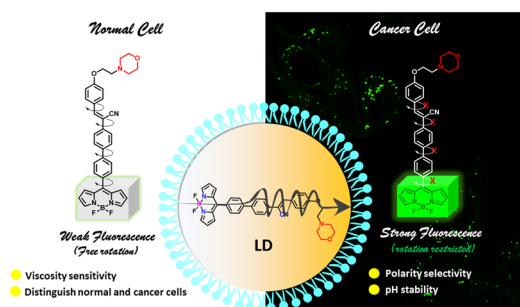


## PAPERS

16914

### meso-Substituted BODIPY rotors as lipid droplet probes for cell-type differentiation

Charutha Kalarikkal, Anjali, Koyeli Mapa\* and Chinna Ayya Swamy P\*



# Industrial Chemistry & Materials



Focus on industrial chemistry  
Advance material innovations  
Highlight interdisciplinary feature

analysis of 06 October  
article is published under a



Innovative.  
Interdisciplinary.  
Problem solving

APCs currently waived

Learn more about ICM  
Submit your high-quality article

@IndChemMater

@IndChemMater

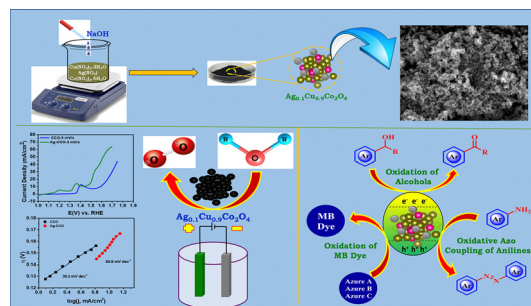
[rsc.li/icm](http://rsc.li/icm)



16925

### Unlocking dual functionality: novel Ag-doped $\text{CuCo}_2\text{O}_4$ for electro-catalytic and photochemical oxidation reactions

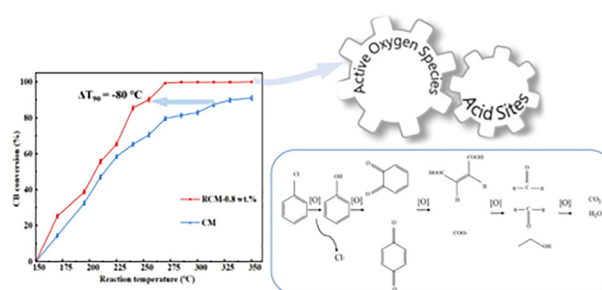
Saumy Sharma, Kumari Anchal, Sameer Kumar Behera, Dhaneshwar Prasad, Gurupada Maity,\* Ashish Kumar Singh,\* Bijneswar Mondal and Subhash Banerjee\*



16937

### Ru-doped MOF-templated $\text{CeMnO}_x$ catalysts for efficient oxidation of chlorobenzene: synergistic effects of active oxygen species and acid sites

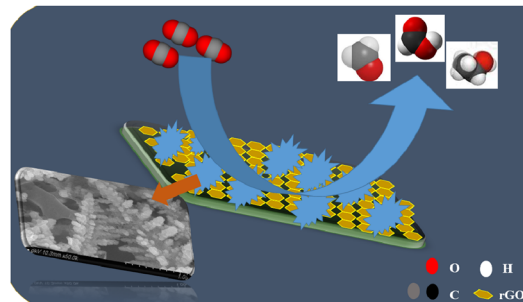
Zhewen Yang, Ke Yin, Lu Cheng, Xiaodong Chen and Bichun Huang\*



16950

### Soft-template-assisted electrodeposition of reduced graphene oxide–copper nanoelectrocatalysts for the carbon dioxide reduction reaction

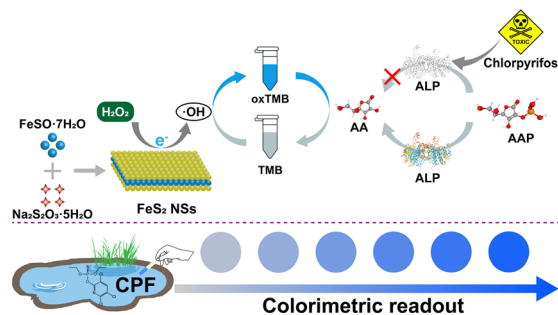
Bommireddy Naveen, Sang-Wha Lee\* and Palathedath Suresh Kumar\*



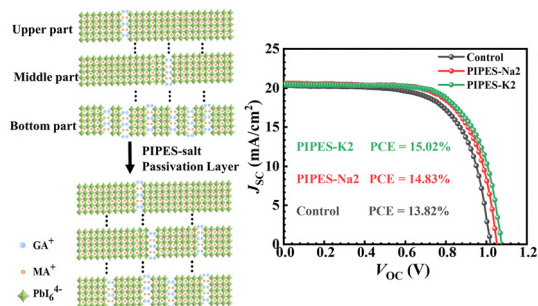
16958

### Rapid pesticide detection based on $\text{FeS}_2$ NSs with high practicality in actual environments

Huaizu Zhang, Huangbang Liang, Huipeng Liu, Qinghui Yang, Guangfu Feng\* and Jun Fang\*



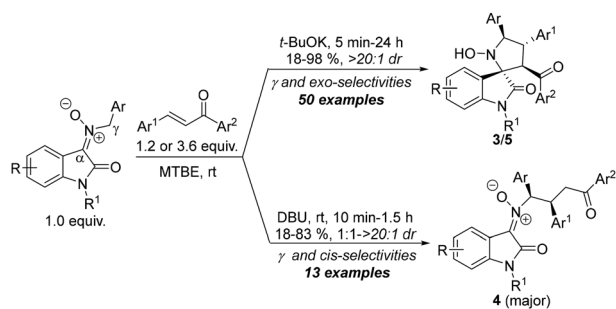
16970



### Buried bottom interface defect passivation of alternating cation interlayer phase quasi-two-dimensional perovskite solar cells

Wenchao Xing, Mengtong Yan, Jihao Ma, Mei Lyu and Jun Zhu\*

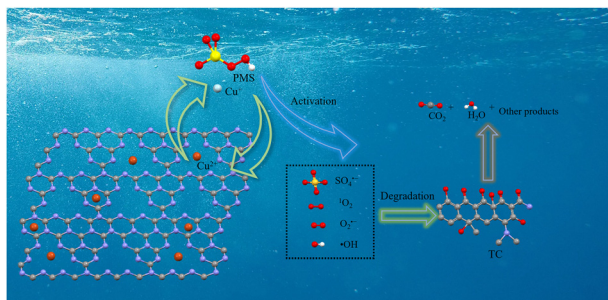
16978



### Base-controlled diastereoselective [3+2]-cycloaddition and Michael addition of isatin ketonitrones and chalcones to construct spiropyrrolidine oxindoles and $\gamma$ -substituted isatin ketonitrones

Silu Chen, Lan Ma, Chao Yue, Biao Du, Cuifen Lu, Chunyan Long, Wanbing Wu, Sicheng Li, Qiao He and Guizhou Yue\*

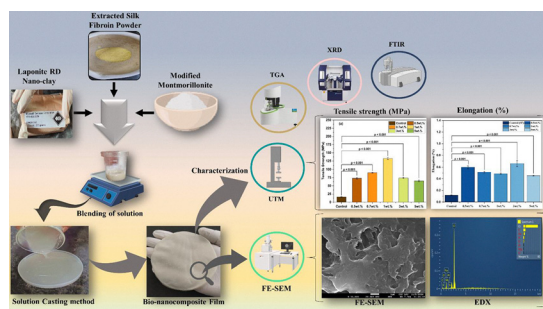
16989



### Single atom Cu anchored on porous polymeric carbon nitride toward peroxymonosulfate activation for emerging pollutant degradation

Ziru Shao, Shuangfei Zhang and Deyong Wu\*

17005



### Synergistic reinforcement of regenerated silk fibroin with LAPONITE® and organomodified montmorillonite for bone tissue engineering

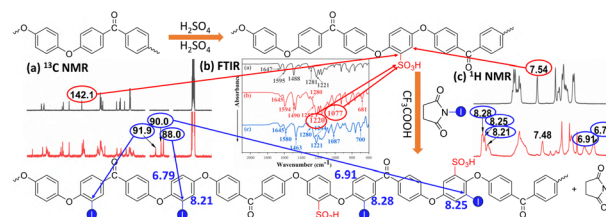
Sushmita Saurav, Prashish Sharma, Anand Mohan, Anil Kumar, Amandeep Heer, Maqsood A. Siddiqui, Abdulaziz A. Al-Khedhairy, Tabarak Malik\* and Madhuri Girdhar\*



17023

### Iodination of sulphonated poly(ether ether ketone) through *N*-iodoimide electrophilic substitution of phenoxy beta-hydrogen

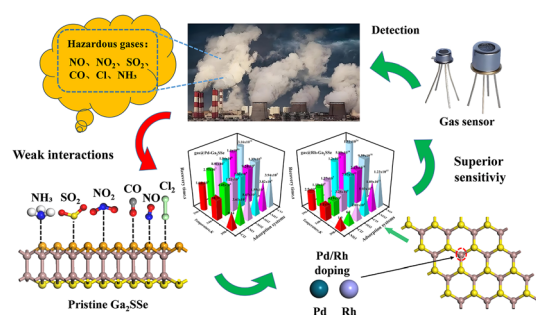
Shiling Yang, Xuesong Gao, Yang Yu, Zheng Zeng, Jiashang Chen, Wensong Du, Ruiyue Liu, Siqi Li, Bowen Chen and Chonggang Wu\*



17030

### First-principles insights into Pd and Rh functionalization of Janus Ga<sub>2</sub>SSe monolayers for enhanced sensing of toxic industrial gases

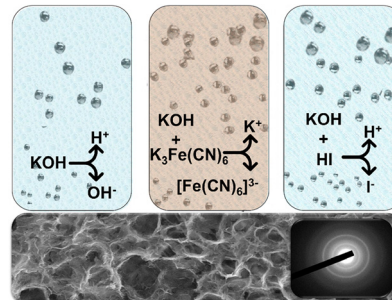
Haojie Huang, Chengcheng Sun, Lei Gan, Huihui Xiong,\* Haihui Zhang\* and Xiaocong Zhong\*



17047

### Strategically improving the oxygen evolution reaction performance of ZnCo<sub>2</sub>S<sub>4</sub> nanoflakes: role-specific redox-additive electrolytes

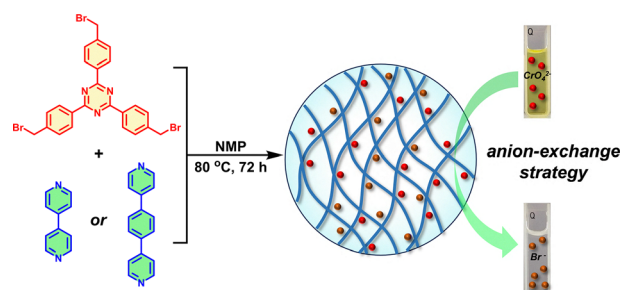
Partha Sarathi Rout, Love Bansal, Bhumika Sahu, Deb Kumar Rath, Nikita Ahlawat, Sharmistha Singh, Saumya Srivastava, Shivam Kumar, Amit Rana, Anjali Chaudhary, Subin Kaladi Chondath\* and Rajesh Kumar\*



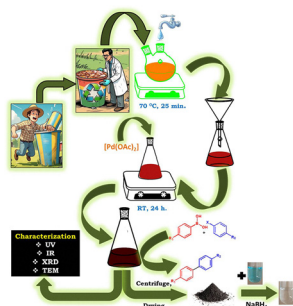
17056

### Triazine-based cationic organic networks with anion-exchange dominance for high-capacity chromate remediation

Kejian Chang,\* Mingyu Zhang, Wenyan Tang, Shulong Zhang, Nana Yang, Liguao Gao, Yuquan Zhang, Hui Wen, Jinping Ren, Minghu Han, Wenduo Li, Haorui Liu, Ning Mi and Zhi-Jun Li\*



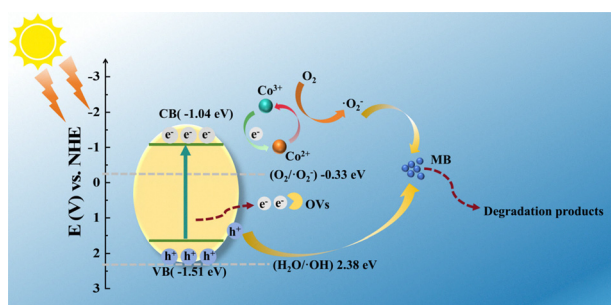
17062



### Peanut skin extract facilitated phytofabrication of PdNPs for dual catalytic applications: Suzuki–Miyaura coupling and methylene blue reduction

Rahul A. Kalel,\* Pranali A. Patil and Prakash B. Rathod

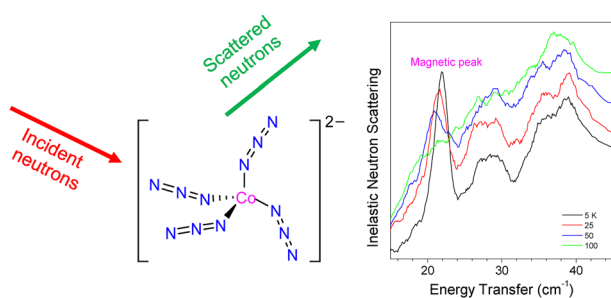
17074



### Synergistic enhancement of photocatalytic activity of $\text{Bi}_4\text{O}_5\text{Br}_2$ via cobalt doping and oxygen vacancy engineering

Huanxia Lin, Wensong Lin,\* Yeheng Zhang, Ran Gao and Yong He

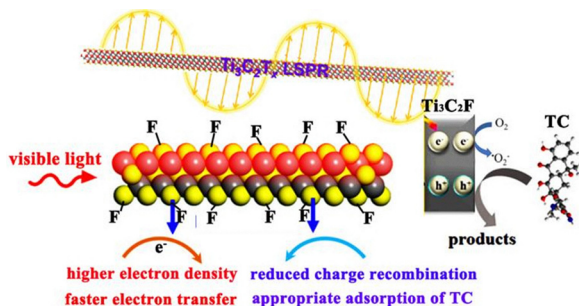
17084



### Advanced spectroscopic studies of $(\text{PPh}_4)_2[\text{Co}(\text{N}_3)_4]$ , a field-induced single-ion magnet

Adam T. Hand, Adiat A. Fakolujo, J. Krzystek, Mykhaylo Ozerov, Luke L. Daemen, Jie Xing, Zheng Gai, Rongying Jin, Joshua Telser, Andrey A. Podlesnyak and Zi-Ling Xue\*

17099



### Plasmonic $\text{Ti}_3\text{C}_2\text{T}_x$ MXene tuned by $\text{T}_x$ terminal groups for boosting the visible-light photocatalytic degradation of tetracyclines

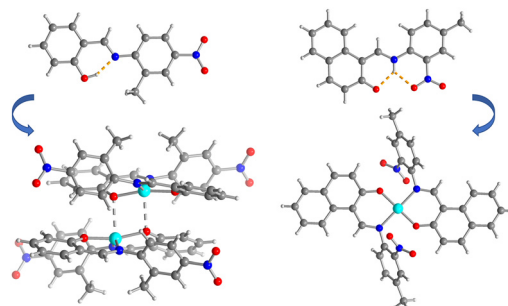
Rui Jiao, Qiyue Jia, Wentao Liang, Hongyu Gao, Xintong Zheng and Zhanli Chai\*



17106

### Dinuclear vs. mononuclear copper(II) complexes with nitrophenylimino-benzylal- vs. -naphthyl-based Schiff base ligands

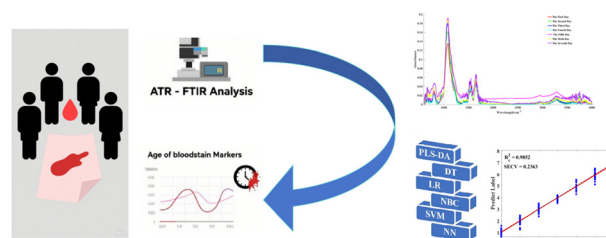
Mohammed Enamullah,\* Imdadul Haque, Galib Abdullah, Fahad Hossain Sourav, Nisat Taslum Jhumur, Mohammad Khairul Islam, Takin Haj Hassani Sohi, Peter Ferber and Christoph Janiak\*



17124

### Estimation of the age of bloodstains from a simulated crime scene using ATR-FTIR spectroscopy and machine learning

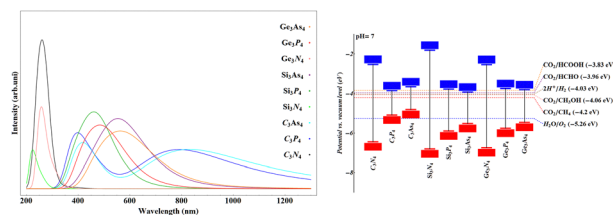
Zhenqing Zhang, Sheng Liu, Yun Jiang, Shouqing Liu,\* Xinhua Wang\* and Feng Chen



17131

### A comparative DFT evaluation of the photocatalytic activity and NLO properties of monolayer two-dimensional $M_3X_4$ ( $M = C, Si, Ge; X = N, P, As$ ) quantum dots

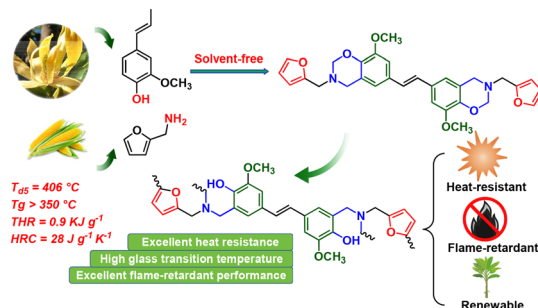
Hossein Farrokhpour,\* Ashkan Riahi and Hamidreza Jouypazadeh\*



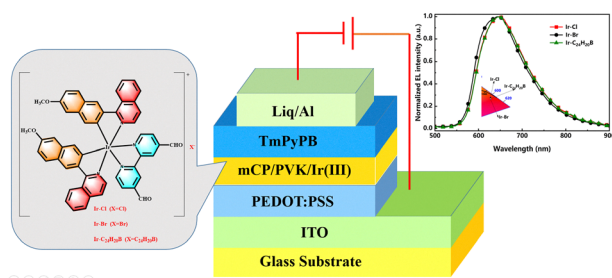
17149

### Furan-derived biobased polybenzoxazines with intrinsic flame retardancy and high thermal stability

Lijun Chen, Yuanjun Hu and Jiajia Wang\*



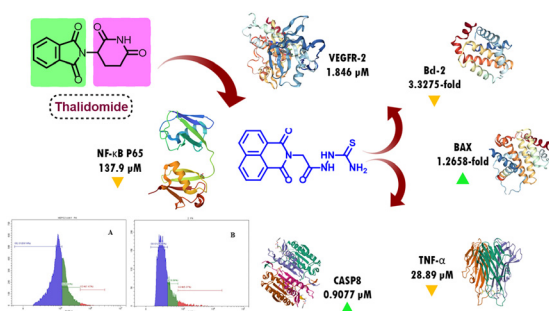
17159



### Counterion-engineered ionic iridium(III) complexes for solution-processed red OLEDs

Jie Tang, Rui Liu, Kai Peng, Jianguyu Zhu and Song Guo\*

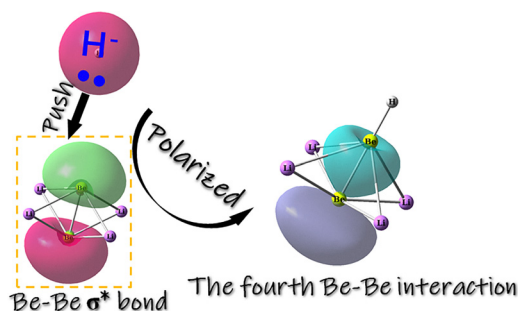
17168



### Naphthalimide derivatives as thalidomide analogs; design, synthesis, and molecular docking of novel anticancer immunomodulatory agents

Yahia A. Amin, Mohamed M. Khalifa,\* Wafa A. Bawazir, Ahd A. Mansour, Helmy Sakr, Mariam K. Alamoudi and Mohamed Ayman El-Zahabi\*

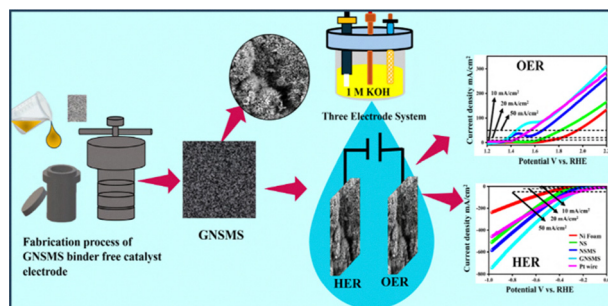
17178



### Theoretical prediction of Be-Be multiple bonding in a hydride-stabilized $\text{Be}_2\text{Li}_4\text{H}^-$ cluster

Lifang Yan, Xingman Liu,\* Min Zhang,\* Xiaomeng Wang, Shuixing Wu, Jianyu Wei\* and Zhongmin Su

17184



### Synergistic influence of GNP-tuned morphology in binary metal sulfide binder-free electrocatalysts for enhanced bifunctional water splitting

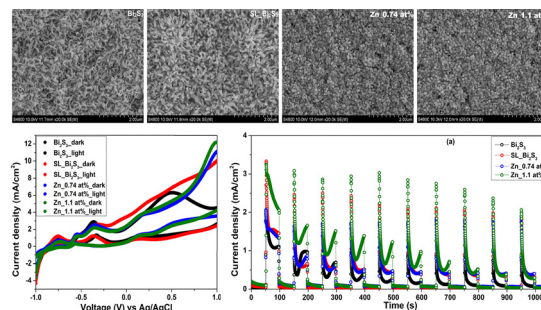
Arun Tamilselvan\* and Aravinth Karuppanan



17196

## Enhanced photoelectrochemical performance of Zn-doped Bi<sub>2</sub>S<sub>3</sub> thin films via seed-layer-assisted growth

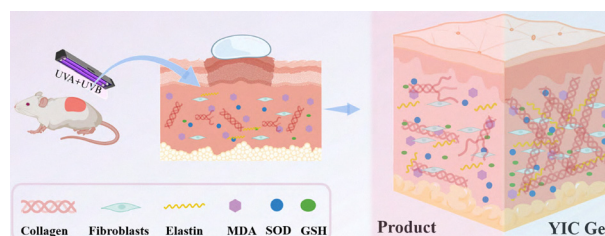
Y. B. Kishore Kumar, Chaitanya Kumar Kunapalli, Vasudeva Reddy Minnam Reddy, Athipalli Divya, Radhalayam Dhanalakshmi, Venkateswarlu Gonuguntla, Talat Ali, Sambasivam Sangaraju\* and U. Chalapathi\*



17207

## Highly stable and bioactive yak type I collagen hydrogels for accelerated healing of photoaging skin

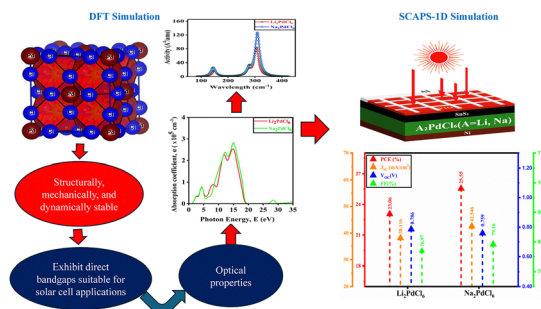
Yi Yang, Bei Tian, Xinyu Tian, Linyan Yao\* and Jianxi Xiao\*



17221

## Comprehensive investigation of the structural, mechanical, optical, and thermoelectric properties and photovoltaic performance of lead-free novel Li<sub>2</sub>PdCl<sub>6</sub> and Na<sub>2</sub>PdCl<sub>6</sub> using DFT and SCAPS-1D simulations

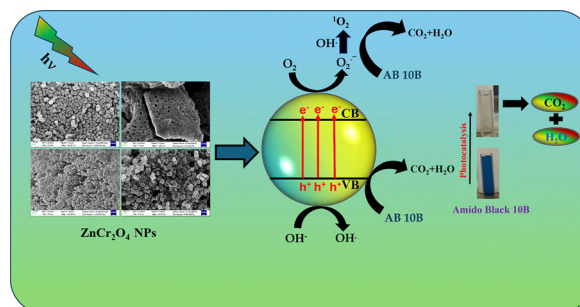
Md. Sakib Hasan Saikot, Rifat Rafiu, Imed Boukris, Md. Azizur Rahman,\* Imtiaz Ahamed Apon, Riyadh Kawasar, Mohd Taukeer Khan, Hanane Etabti, Jothi Ramalingam Rajabathar and Hind Albalawi



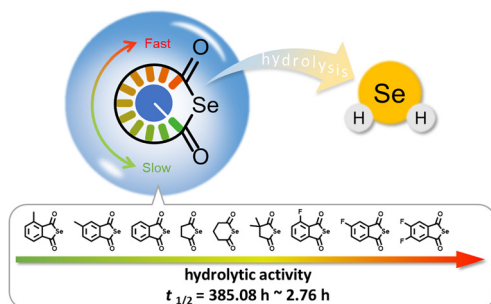
17246

## Nanoarchitectonics of ZnCr<sub>2</sub>O<sub>4</sub> nanoparticles and studies on their morphology-dependent magnetic and photocatalytic properties for sustainable removal of Amido Black 10B

Anirban Chakraborty and Pethaiyan Jeevanandam\*



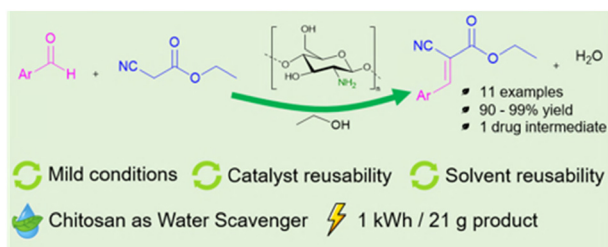
17263



### Exploring the large-scale regulation of hydrogen selenide release rate by selenoanhydride structures and their cytotoxic effects toward 4T1 cells

Yuquan Zou, Yu Xiang, Yumei An, Hanliang He,\*  
 Jian Yuan, Jiandong Zhang, Mingyang Zhang,  
 Guoqing Jin,\* Jiajia Li, Jian Zhu and Xiangqiang Pan\*

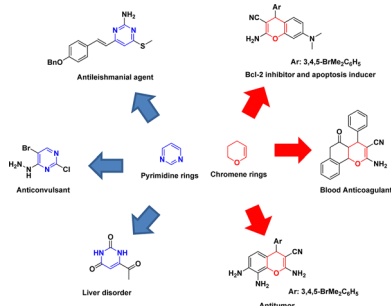
17271



### Chitosan as a solid catalyst for the one-pot Knoevenagel condensation in the context of sustainable chemistry

Usman Ali, Friedemann Dressler, Lysander Q. Wagner,  
 Paul P. Debes, Jaime Gallego, Peter R. Schreiner\* and  
 Bernd M. Smarsly\*

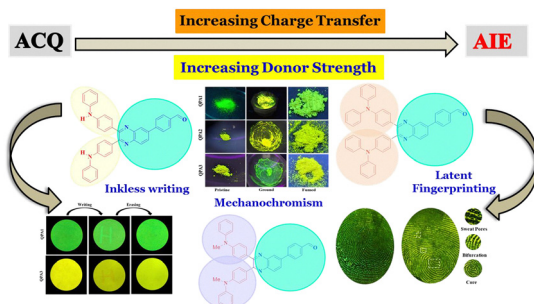
17285



### Introduction of $[C_4(DABCO)_2] \cdot (CuCl_4)$ as an efficient catalyst for the green synthesis of pyrano[2,3-*d*]pyrimidinones and dihydropyrano[3,2-*c*]chromenes and dual pathway synthesis of 2,3-dihydroquinazolinone derivatives

Fatemeh Mirzaei Eslamlou, Maryam Mousapour and  
 Farhad Shirini\*

17300



### Mechanochromism and aggregation-induced emission directed by donor strength in quinoxaline-based D–A molecules with application in latent fingerprinting and inkless writing

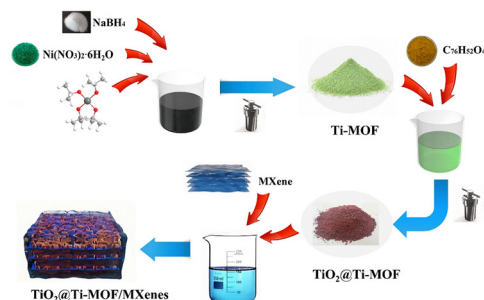
Surendra Kumar, Ankit Kumar Srivastava,  
 Ashish Kumar Kushwaha, Anjani Kumar and  
 Roop Shikha Singh\*



17313

### Three-dimensional covalent nanochannels in TiO<sub>2</sub>@Ti-MOF/MXene heteroarchitectures enable selective 4-aminophenol detection in complex aqueous systems

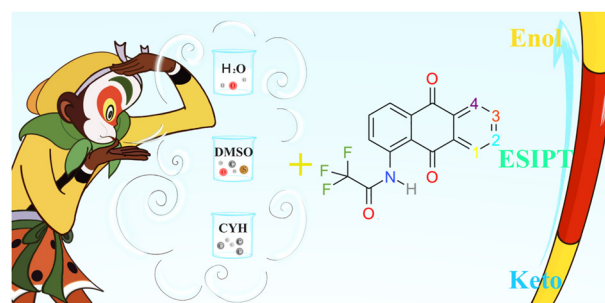
Tianying Peng,\* Wenyong Mei, Jin Zhang and Saiwen Liu\*



17323

### Synergetic effect of atomic electronegativity, substitution position and solvent polarity on the ES IPT process of 1-(trifluoroacetyl amino)anthraquinone derivatives: a DFT study

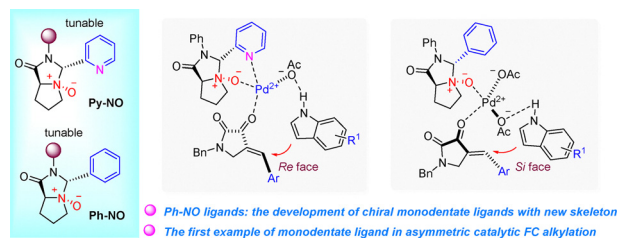
Xi Chen, Yan Leng, He Sun, Chun-Gang Min\* and Ai-Min Ren\*



17335

### Monodentate/bidentate chiral Ph/Py-NO ligands: an unexpected switch of enantioselectivity in Friedel–Crafts alkylation of indoles and 2,3-dioxopyrrolidines

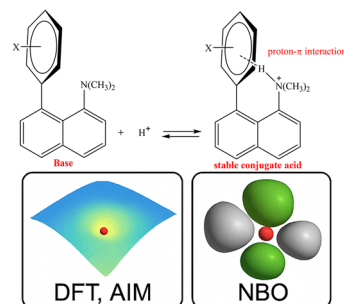
Jing Lou, Xian-Qiao Zhu, Di-Cheng Pan, De-Wu Liu,\* Hui-Xian Jing, Xiong-Li Liu,\* Wen-Jing Zhang, Hong-Xing Cen and Guo-Dong Deng\*



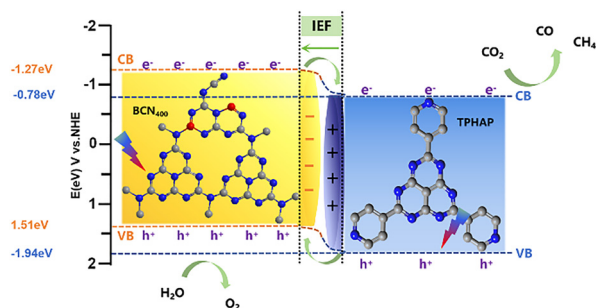
17350

### DFT investigation of proton affinity and intramolecular proton- $\pi$ interactions in *N,N*-dimethylnaphthylamine derivatives: insights from aromaticity, AIM, and NBO analyses

Hamid Saeidian, Zohreh Mirjafary\* and Ashkan Ghiasi



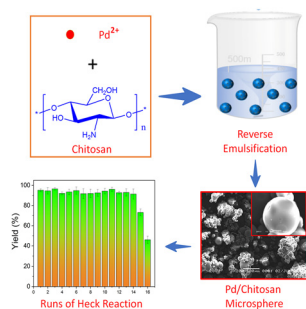
17362



### Band structure engineering for a graphitic carbon nitride-based hybrid with improved photocatalytic CO<sub>2</sub> reduction performance

Yanrui Li,\* Xuehao Li, Bozhan Li, Ruyu Guo and Xiang Gao\*

17370



### Palladium-incorporated chitosan microspheres *via* inverse emulsion: a highly active and stable heterogeneous catalyst for Heck reactions

Ling Yang, Jing Zou, Zheng Yin, Linjun Shao,\* Guiying Xing\* and Xian-Man Zhang

