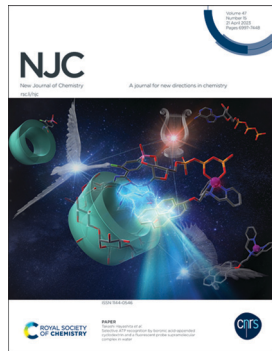


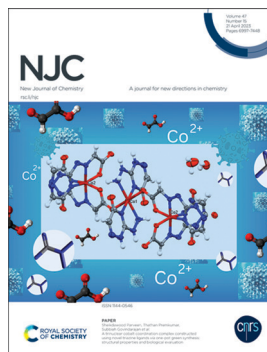
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ISSN 1144-0546 CODEN NJCHES 47(15) 6997-7448 (2023)



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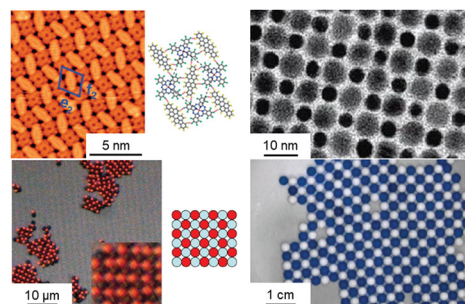
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## PERSPECTIVE

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### Do chemists control plane packing, *i.e.* two-dimensional self-assembly, at all scales?

Clémence Chinaud-Chaix, Nataliia Marchenko, Thomas Fernique and Simon Tricard\*

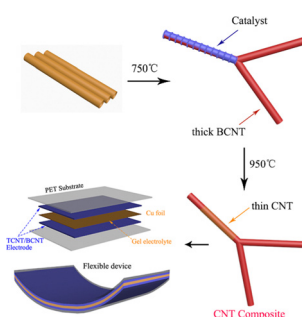


## COMMUNICATIONS

7026

### Thin carbon nanotube coiled around thick branched carbon nanotube composite electrodes for high-performance and flexible supercapacitors

Yongsheng Zhou,\* Tao Wang, Shou Peng,\* Tingting Yao, Yingchun Zhu and Bingshe Xu



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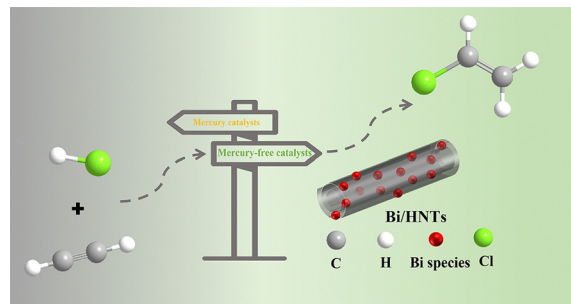


## COMMUNICATIONS

7030

**Halloysite nanotube-supported bismuth catalysts for acetylene hydrochlorination**

Fanxiang Meng, Lu Wang,\* Haijun Yan, Meng Zhang, Jide Wang, Ling Zhao, Chao Yang and Ronglan Wu

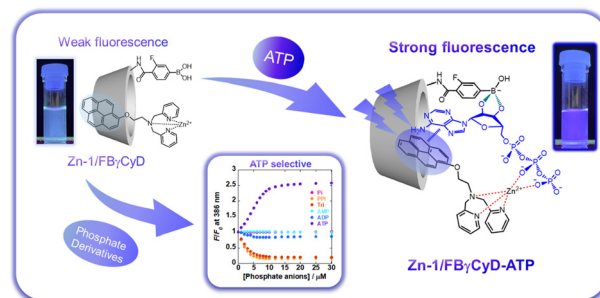


## PAPERS

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**Selective ATP recognition by boronic acid-appended cyclodextrin and a fluorescent probe supramolecular complex in water**

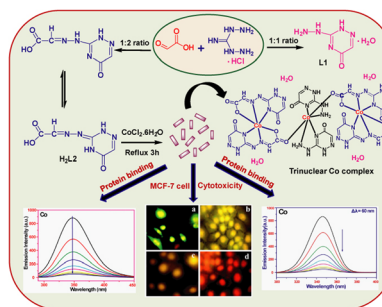
Yota Suzuki, Masakage Masuko, Takeshi Hashimoto and Takashi Hayashita\*



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**A trinuclear cobalt coordination complex constructed using novel triazine ligands via one-pot green synthesis: structural properties and biological evaluation**

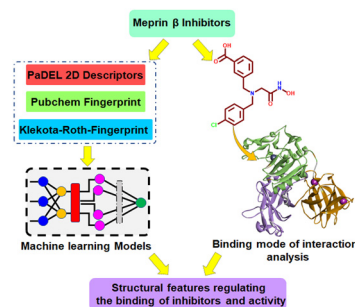
Sheikdawood Parveen,\* Thathan Premkumar,\* Hung-Huy Nguyen and Subbiah Govindarajan\*



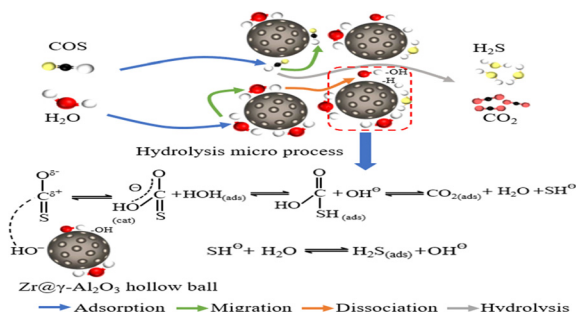
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**Quantitative structural assessments of potential meprin  $\beta$  inhibitors by non-linear QSAR approaches and validation by binding mode of interaction analysis**

Suvankar Banerjee, Sandip Kumar Baidya, Balam Ghosh, Suvendu Nandi, Mahitosh Mandal, Tarun Jha\* and Nilanjan Adhikari\*



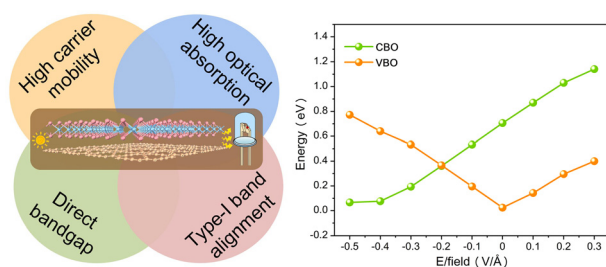
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### A study on the catalytic performance of the ZrO<sub>2</sub>@ $\gamma$ -Al<sub>2</sub>O<sub>3</sub> hollow sphere catalyst for COS hydrolysis

Zhang Lei,\* Wang Hengliang, Lei Zhang, Jia Yang and Wang Qi

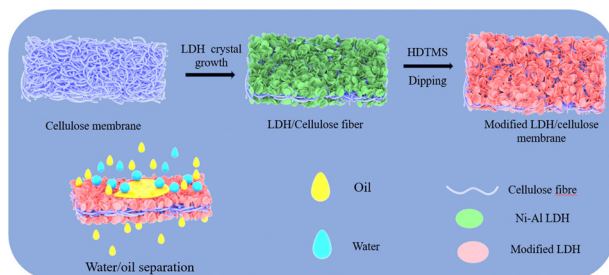
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### Interfacial electronic properties and tunable band offset in graphyne/MoSe<sub>2</sub> heterostructure with high carrier mobility

Siyu Zhang, Jiangni Yun,\* Liru Zeng, Linwei Yao, Zhisong Bi, Chunwei Mai, Peng Kang, Junfeng Yan and Zhiyong Zhang

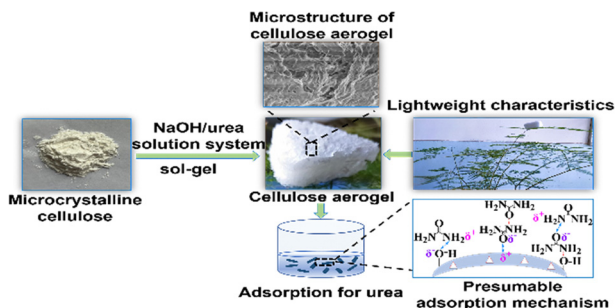
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### Superhydrophobic and superlipophilic LDH flower balls/cellulose membranes for efficient oil–water separation

Xinglei Wu, Shuangjiang Feng, Chunfeng Mao, Chenghuan Liu, Yiwei Zhang, Yuming Zhou\* and Xiaoli Sheng\*

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### An ultralight aerogel-type urea absorbent for the development of a wearable artificial kidney

Yaping Yuan, Jing Li,\* Chenyuan Guo, Lili Zhang, Yuyan Song, Yanli He, Yankun Luo and Shuguang Shen\*

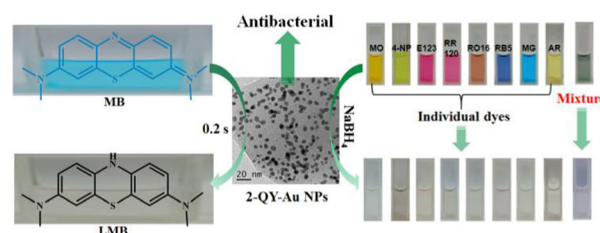


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### *In situ* formation of gold nanoparticles@supramolecular hydrogels with ultra-fast catalytic reduction of dyes and excellent anti-bacterial properties

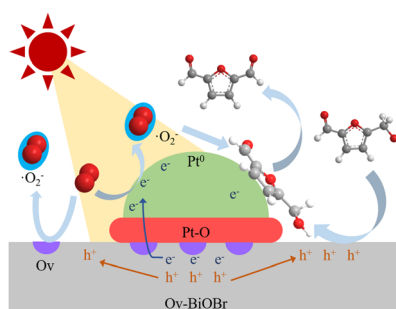
Xiao-Juan Wang, Lang Zhang, Chuan-Wan Wei,\*  
Shu-Qin Gao, Wei Luo and Ying-Wu Lin\*



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### Highly selective photocatalytic oxidation of 5-hydroxymethylfurfural by interfacial Pt–O bonding Pt–Ov–BiOBr

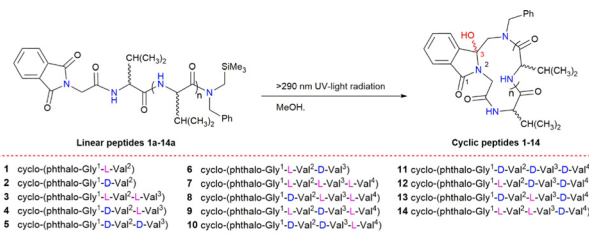
Ming Gong, Hui Zhao, Chengsi Pan, Yuming Dong,\*  
Yingxin Guo, Haixia Li, Jiawei Zhang, Guangli Wang and  
Yongfa Zhu



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### Photo-induced synthesis, stereochemistry and antitumor activity of valine-based small cyclopeptides

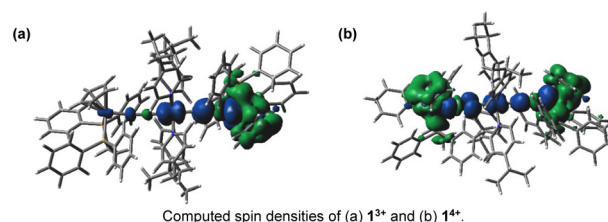
Xu Han, Yujun Bao, Xiong Zhang, Tong Li, Rui Yan,  
Zhiqiang Wang\* and Yingxue Jin\*



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### MMCT energy change in cyanidometal-bridged trinuclear complexes by changing the ligand electron donating ability

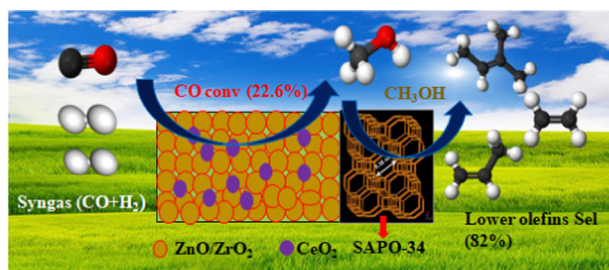
Wang Qian, Xiao-Lin Liu, Bing-Chang Tan, Ying Song,  
Long-Long Jiang, Xin-Tao Wu and Tian-Lu Sheng\*





## PAPERS

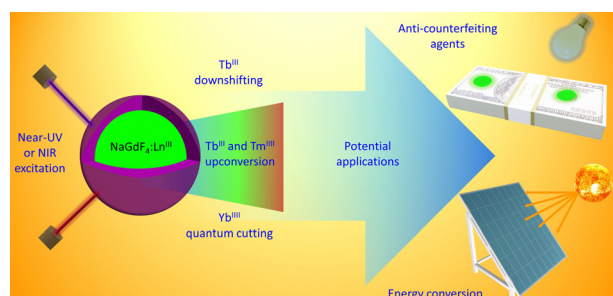
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### A bifunctional Zn/ZrO<sub>2</sub>-SAPO-34 catalyst for the conversion of syngas to lower olefins induced by metal promoters

G. Raveendra,\* Harisekhar Mitta, Shrutika Linglwar, Putrakumar Balla, Rajesh Rajendran, Bhanuchander Ponnala, M. Safdar and Perupogu Vijayanand\*

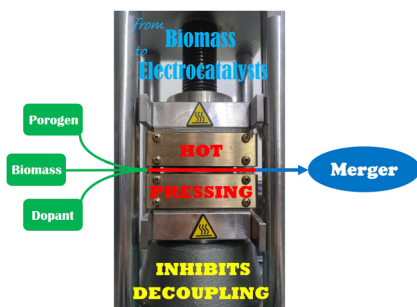
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### Multi-emission processes of hierarchically structured NaGdF<sub>4</sub>:Tm:Yb:Tb core@shell nanoparticles

Amanda Justino de Morais, Ailton Germano Bispo-Jr, Flavia de Sousa Ferreira, Italo Odone Mazali and Fernando Aparecido Sigoli\*

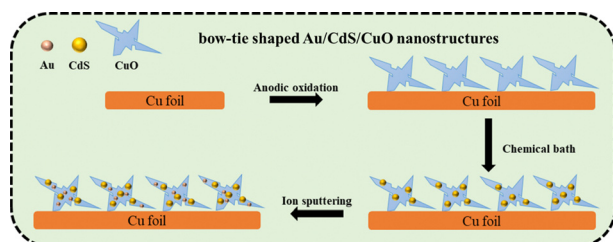
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### Improving the performance of biomass-based electrocatalysts by means of hot pressing

Tianhao Huang, Wendu Zhang,\* Weiqi Liu, Shilin Wei, Wujun Geng, Xue Xia and Lang Xu\*

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### Controlled synthesis of bow-tie shaped Au/CdS/CuO nanostructures with improved wettability, photoelectrochemical and photocatalytic properties

Chen Wang, Qi Zhang, Xueqi Wang, Zhicheng Zhang, Xudong Xiong, Chao Xu, Zhao Fan and Yongqian Wang\*



## The effect of $\pi$ -linker bulk on the photophysical properties of 2-phenylfuro[2,3-*b*]quinoxaline-based FQ- $\pi$ -FQ-type compounds

# How to enhance the effective spin-reversal barriers of two-coordinate Co(II) imido complexes with [CoN]<sup>+</sup> core? a theoretical investigation

Figure 1 displays the crystal structure and IR spectra of the Co-N complex. The top part shows a 3D ball-and-stick model of the Co-N complex with bond lengths of 1.972 Å and 1.331 Å, and angles of 175.72° and 173.13°. The bottom part is a plot of IR spectra showing  $\Delta$  (cm<sup>-1</sup>) and  $L_c$  (KDq) versus Co=N (Å). The red line represents  $\Delta$  (cm<sup>-1</sup>) and the blue line represents  $L_c$  (KDq). Both show a step-like increase as the Co=N bond length increases.

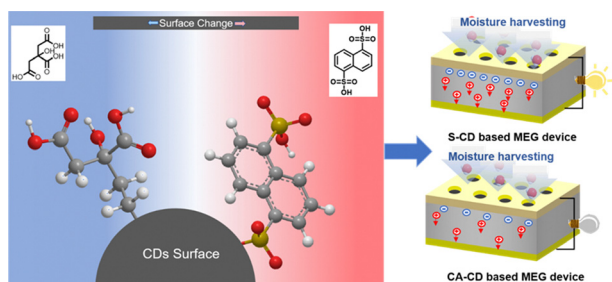
# An "off-on"-type electrochemiluminescent immunosensor based on resonance energy transfer and a liposome-assisted strategy for signal amplification

# Gamma irradiated structural modification of $\text{Ti}_3\text{C}_2\text{T}_x$ for high performance supercapacitors and the hydrogen evolution reaction

Figure 1: Schematic diagram of the MXene-based photocatalytic system. The diagram illustrates the structure of the MXene-based photocatalytic system, showing a vertical stack of MXene layers (represented by blue wavy lines) and a yellow box labeled "Gamma-Rays" with a radiation symbol. An arrow points from the Gamma-Rays box to the MXene layers. To the right, a scanning electron micrograph (SEM) shows the layered structure of MXene. Below the SEM image, a table lists the chemical composition and the corresponding photocatalytic activity (measured as current density in mA/cm²) for three different MXene samples: Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub>, Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub>-100, and Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub>-300. The Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> sample shows the highest activity, with a current density of 475 mA/cm² at 0 V vs RHE. The Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub>-100 and Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub>-300 samples show lower activities, with current densities of 97.9 mA/cm² and 60.2 mA/cm², respectively, at 0 V vs RHE.

## PAPERS

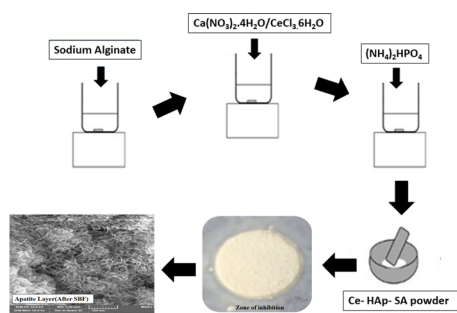
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### Enhanced moisture-enabled electricity generation through carbon dot surface functionalization using strong ionizing organic acid

Yukun Qin, Jing Tan, Shuai Meng, Yuchen Li, Mengde Zhai, Xiaoxian Song, Cheng Chen, Xudong Ren, Qijun Li,\* Ming Cheng\* and Jianning Ding\*

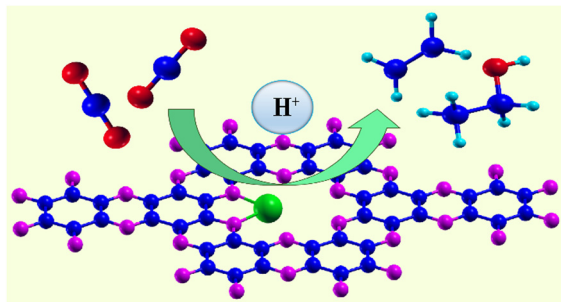
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### Development of a Ce-doped hydroxyapatite–sodium alginate biocomposite for bone and dental implants

Urwa Shahid, Awais Nisar, Muhammad Atiq Ur Rehman, Saeed Omer, Qanita Tayyaba, Munib Ahmed Shafique and Sajid Iqbal\*

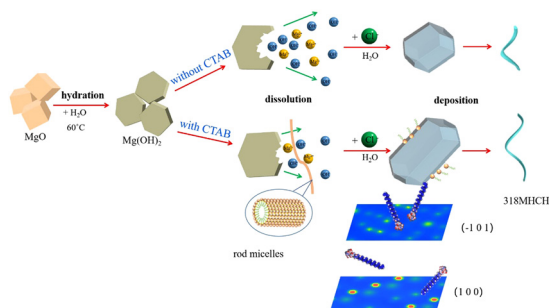
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### Understanding the activity of single atom catalysts for CO<sub>2</sub> reduction to C<sub>2</sub> products: A high throughput computational screening

Afshana Hassan and Manzoor Ahmad Dar\*

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### CTAB assisted synthesis of ultra-high aspect ratio 3Mg(OH)<sub>2</sub>·MgCl<sub>2</sub>·8H<sub>2</sub>O nanowires

Lu Gong, Zhenying Yao, Chunmei Zhu, Lan Xiang, Xin Lian, Bai He, Baoyan Fan and Bo Yu\*



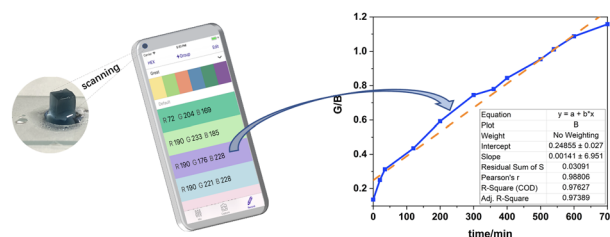


## PAPERS

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**Hydrophilic–hydrophobic hybrid gel for effective humidity capture and response**

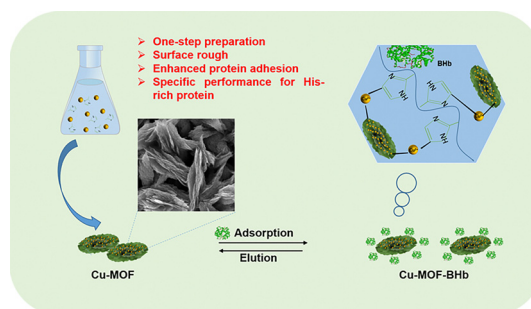
Shu-Hua Ma, Feng-Lian Zeng, Xue-Ting Jin, Hui Dong, Min Liu and Yang-Hui Luo\*



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**Copper ion based metal–organic framework nanomaterials with roughness enhanced protein adhesion for high-efficiency hemoglobin separation**

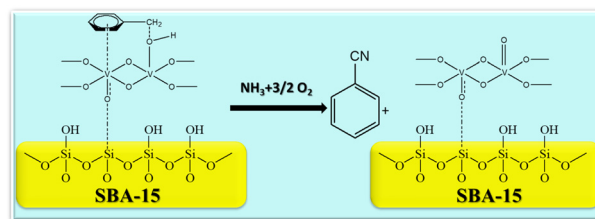
Qiu-Ling He, Ben-Xu Jia, Yu-Kun Wang, Meng Qin, Wang-Bo Xu, Zhen Zhang,\* Yan-Fang Feng\* and Bo Zhou\*



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**Vanadium–phosphorous oxide supported on mesoporous SBA-15 catalysts for ammoxidation of toluene to benzonitrile**

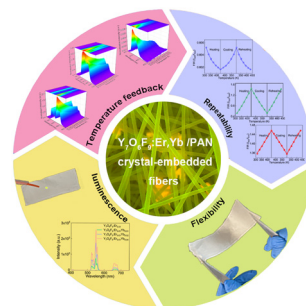
N. Pethan Rajan, Srinivasarao Ginjupalli, Bhanuchander Ponnala, Hussain SK, Sungtak Kim\* and Putrakumar Balla\*



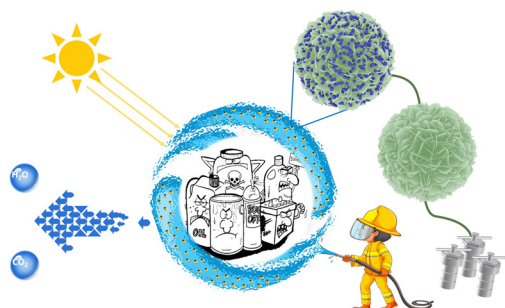
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**Multiple fluorescence-temperature feedback in Y<sub>7</sub>O<sub>6</sub>F<sub>9</sub>:Er/Yb crystal-embedded polyacrylonitrile fibers**

Z. Liu, Y. Li, X. Zhao,\* E. Y. B. Pun and H. Lin



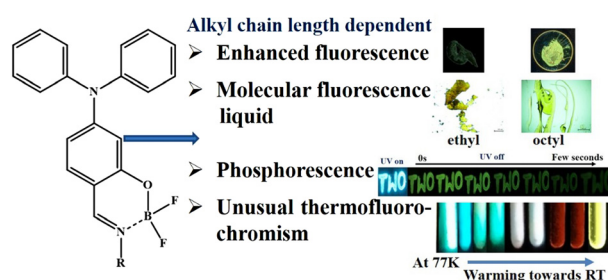
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### Facile fabrication of a BiOBr-Cu<sup>2+</sup>/TiO<sub>2</sub> suspension for efficient equipment decontamination

Jie Zhang, Xuemeng Tian,\* Chaochao Dong, Ruixia Gao and Yuan Hu\*

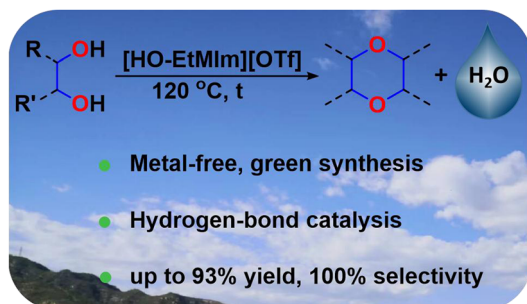
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### Triphenylamine-boron complexes: molecular thermometry and alkyl chain controlled molecular fluorescent liquids

Parthasarathy Gayathri, Sasikala Ravi, Subramanian Karthikeyan, Anuradha Mohitkar, Subbalakshmi Jayanty, Mehboobali Pannipara, Abdullah G. Al-Sehemi, Dohyun Moon\* and Savarimuthu Philip Anthony\*

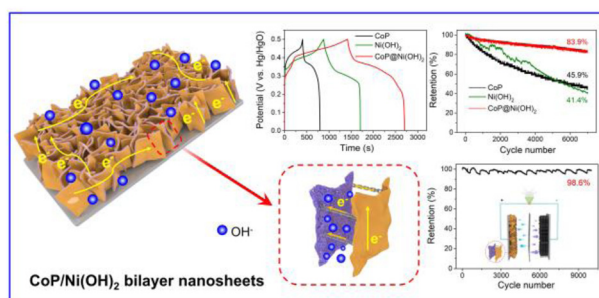
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### Hydrogen bonding-catalyzed synthesis of 1,4-dioxanes from dehydrative cyclization of vicinal diols in ionic liquids

Xiaoqian Chang, Yuepeng Wang, Yanfei Zhao, Ying Wang, Rongxiang Li, Zhengang Ke, Penglei Chen\* and Zhimin Liu\*

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### Rational design of CoP@Ni(OH)<sub>2</sub> bilayer nanosheets for high-performance supercapacitors

Jie Liu, Yu Chen, Yin Wang, Lu Liu, Qi Chen, Qingqing Shi, Luyi Huang, Xing Chen\* and Kun Xie\*

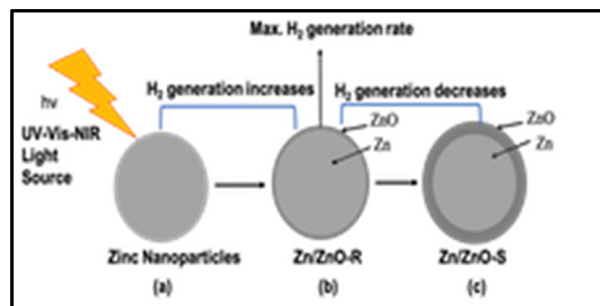


## PAPERS

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### *In situ*/photoinduced fabrication of Zn/ZnO nanoscale hetero-interfaces with concomitant generation of solar hydrogen

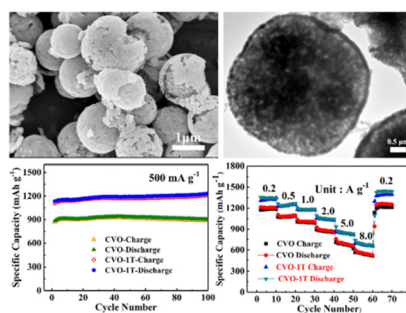
Priti A. Mangrulkar,\* Nilesh R. Manwar, Anushree A. Chilkalwar, Aparna S. Deshpande and Sadhana S. Rayalu\*



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### Magnetic field assisted fabrication of yolk-shell $\text{Co}_3\text{V}_2\text{O}_8$ microspheres for superior lithium-ion storage

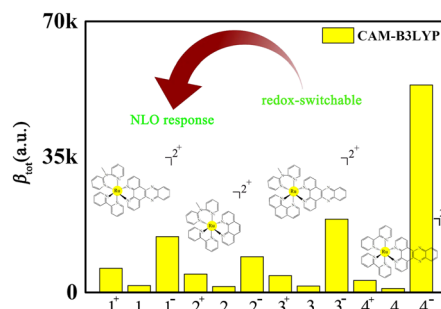
Jiafeng Zhou, Jin Bai, Yunjie Mao, Hongyang Ma, Xuebin Zhu, Bangchuan Zhao\* and Yuping Sun



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### Substituent and redox effects on the second-order NLO response of Ru(II) complexes with polypyridine ligands: a theoretical study

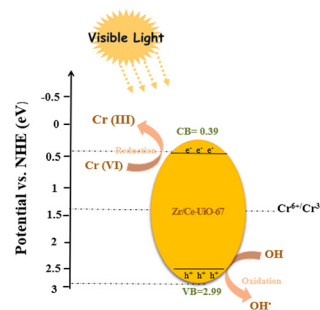
Yingying Wang, Yu Chen, Yuanyuan Zhao\* and Yongqing Qiu\*



7335

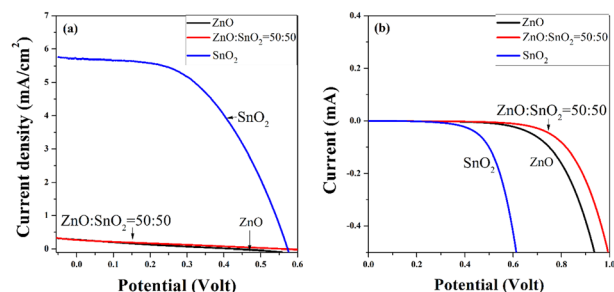
### One-step solvothermal synthesis of the bimetallic Zr/Ce-UiO-67 metal-organic framework: a visible-light-activated photocatalyst for Cr(VI) detoxification

Moein Darabi Goudarzi, Mahsa Bigam Sabouti, Negin Khosroshahi and Vahid Safarifar\*



## PAPERS

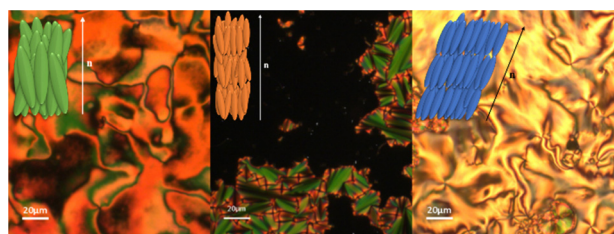
7346



### Investigation of the structural and electrochemical properties of a ZnO–SnO<sub>2</sub> composite and its electrical properties for application in dye-sensitized solar cells

Arzoo Sheikh, Kumavat Soni, R. Brajpuriya and N. Lakshmi\*

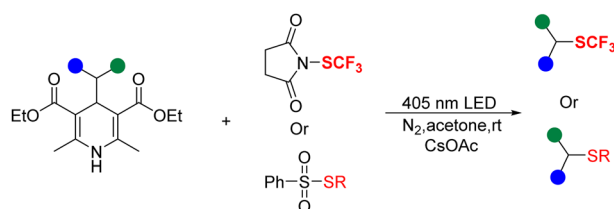
7356



### The effects of alkylthio chains on the properties of symmetric liquid crystal dimers

Ewan Cruickshank,\* Grant J. Strachan, Magdalena M. Majewska, Damian Pocięcha, Ewa Gorecka, John M. D. Storey and Corrie T. Imrie

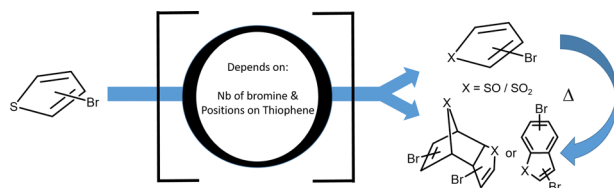
7369



### Catalyst-free photochemical reactions of alkyl dihydropyridines via modulation of chromophores and light wavelength

Yanzhu Liu, Zhonglin Zhang, Zhixin Wei, Zhiying Zhong, Shiwen Liu,\* Yi Yang\* and Xiaojun Zeng\*

7375



### Dimerization reactions with oxidized brominated thiophenes

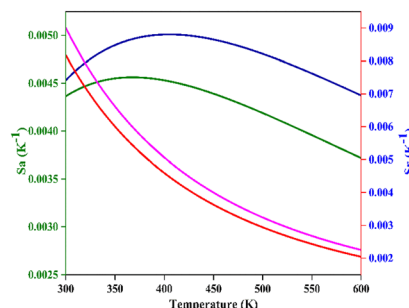
Khaled Youssef, Magali Allain, Thomas Cauchy and Frédéric Gohier\*



7381

## Upconverting temperature sensors with high activation energy and low pump threshold

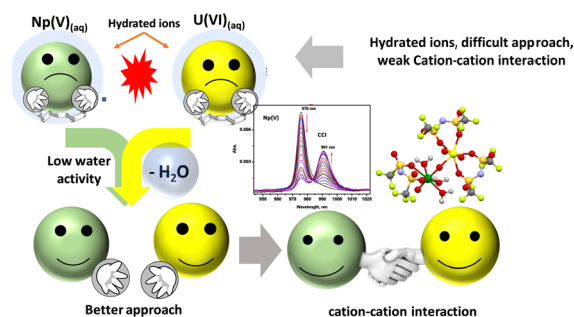
Manisha Prasad and Vineet Kumar Rai\*



7391

## Effect of hydration of a room temperature ionic liquid on the cation–cation interaction of $\text{UO}_2^{2+}$ and $\text{NpO}_2^+$ ions

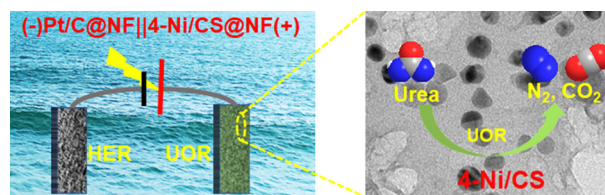
Parveen Kumar Verma, Arunasis Bhattacharyya and Prasanta Kumar Mohapatra\*



7399

## Facile and scalable synthesis of 2D porous Ni/C via a salt-template assisted approach for enhanced urea oxidation reaction and energy-saving hydrogen production

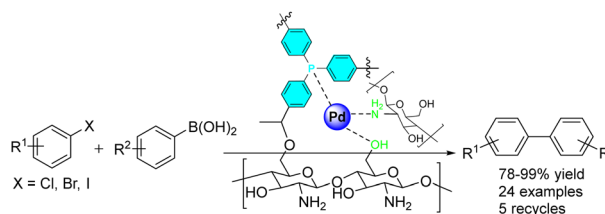
Fengjiao Li,\* Xiaoming Zhang, Shuting Liang,\* Mingjuan Sun, Xiaolin Zhao, Haiwei Chen\* and Yanhui Cui



7410

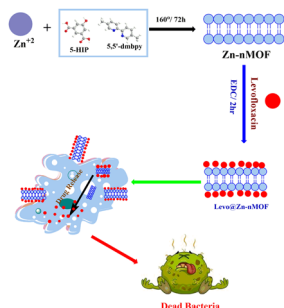
## A $\text{PPh}_3$ modified-chitosan supported Pd nanocatalyst for heterogeneous Suzuki–Miyaura cross coupling reactions

Shuhui Sun, Jiabin Song, Xiaoshuang Yuan, Yushuang Zhang, Zhe Shu, Cong-Xia Xie and Xiaofei Jia\*





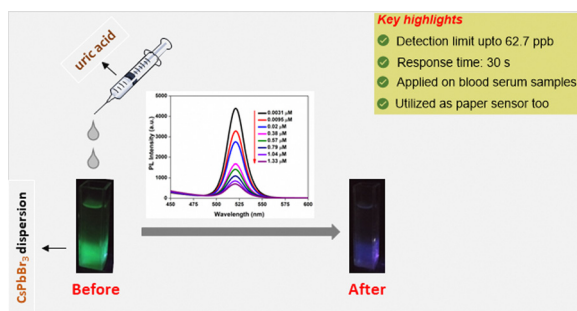
7416



### New mixed-ligand Zn(II)-based MOF as a nanocarrier platform for improved antibacterial activity of clinically approved drug levofloxacin

Zia Ul Haq Bhat, Summaiya Hanif, Zeeshan Rafi, Mohammad Jane Alam, Musheer Ahmad and M. Shakir\*

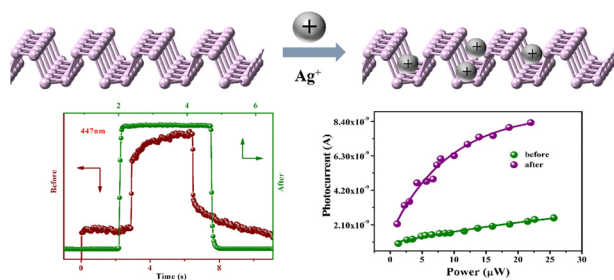
7425



### Cesium lead bromide as a colorimetric and fluorometric sensing platform for the selective detection of uric acid

Priyankamoni Saikia, Jayashree Nath, Swapan Kumar Dolui\* and Sanjeev Pran Mahanta\*

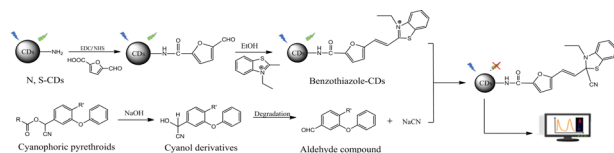
7432



### Silver-ion-passivated black phosphorus photodetectors to improve the response time

Huilin Zuo, Jing Bai, Chenglin Wang, Junhao Ni, Yang Ding, Bingyu Pan, Zhengyang Cai, Shaoqing Xiao, Xiaofeng Gu, Xiumei Zhang\* and Haiyan Nan\*

7438



### Fluorometric assay of cyanophoric pyrethroids based on benzothiazole modified carbon quantum dots

Peng Wang, Qiang Zhang, Donghui Liu, Zhiqiang Zhou and Peng Wang\*



## CORRECTION

7446

**Correction: First principles study of electronic properties and optoelectronic performance of type-II SiS/BSe heterostructure**

Shah Saleemullah Sabir, H. U. Din,\* Q. Alam, M. Idrees, Bin Amin, W. Khan, M. Farooq,\* Cuong Q. Nguyen\* and Chuong V. Nguyen

