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## IN THIS ISSUE

ISSN 1359-7345 CODEN CHCOFS 60(58) 7381-7512 (2024)



### Cover

See Chinmay Chowdhury *et al.*, pp. 7427–7430. Image reproduced by permission of Chinmay Chowdhury from *Chem. Commun.*, 2024, 60, 7427.



### Inside cover

See Jinhye Bae *et al.*, pp. 7414–7426. Image reproduced by permission of Jinhye Bae from *Chem. Commun.*, 2024, 60, 7414.

## PROFILE

7391

### Contributors to the Emerging Investigators collection 2024: Part 1

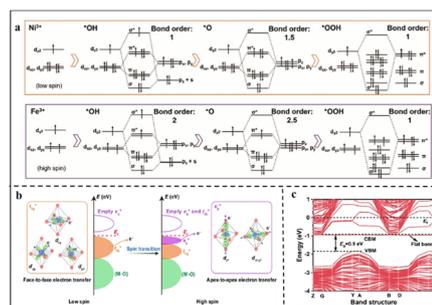


## HIGHLIGHT

7397

### The spin polarization strategy regulates heterogeneous catalytic activity performance: from fundamentals to applications

Yan Wang, Junkang Sun, Ning Sun, Mengyang Zhang, Xianya Liu, Anlei Zhang\* and Longlu Wang\*



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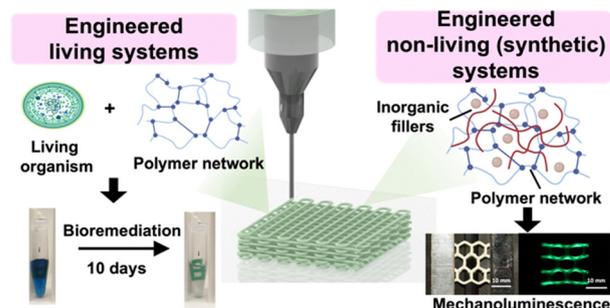


## FEATURE ARTICLE

7414

## Extrusion-based 3D printing of soft active materials

Jiayu Zhao, Xiao Li, Donghwan Ji and Jinhye Bae\*

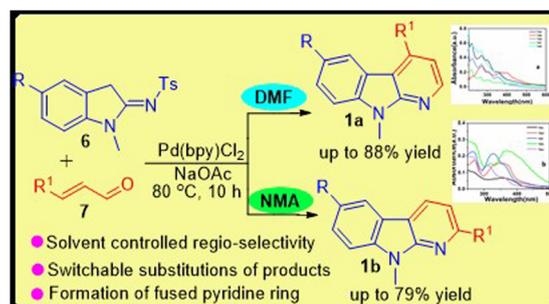


## COMMUNICATIONS

7427

A solvent controlled regioselective synthesis of 2- and 4-substituted  $\alpha$ -carbolines under palladium catalysis

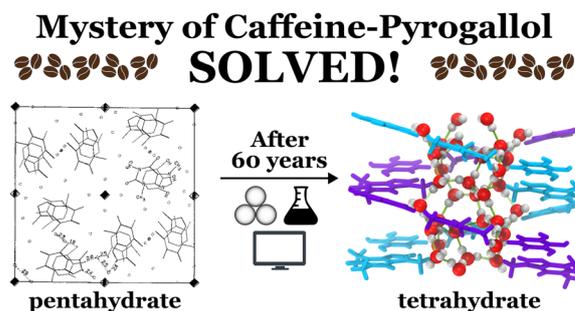
Sarat Chatterjee, Rousunara Khatun, Mahammad Ali and Chinmay Chowdhury\*



7431

## Structure of the caffeine–pyrogallol complex: revisiting a pioneering structural analysis of a model pharmaceutical cocrystal

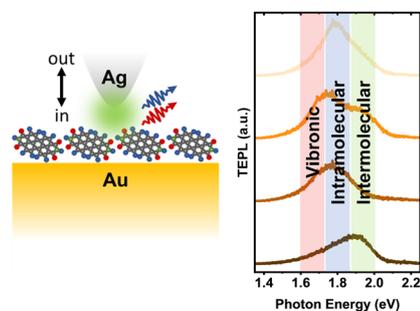
Okba Al Rahal, Michael Ferguson, Cameron B. Lennox, Louise Male and Tomislav Friščić\*



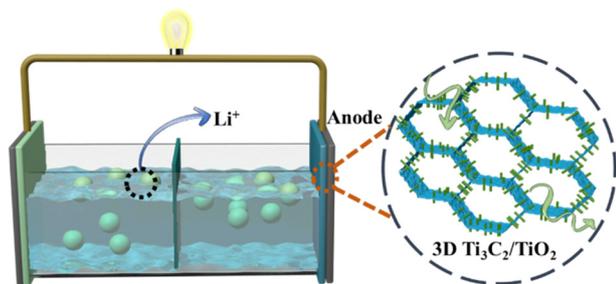
7435

## Visualizing nanoscale heterogeneity in perylene thin films via tip-enhanced photoluminescence with unsupervised machine learning

Pavel Valencia-Acuna, Kushal Rijal, Chih-Feng Wang, Maxim Ziatdinov, Wai-Lun Chan\* and Patrick Z. El-Khoury\*



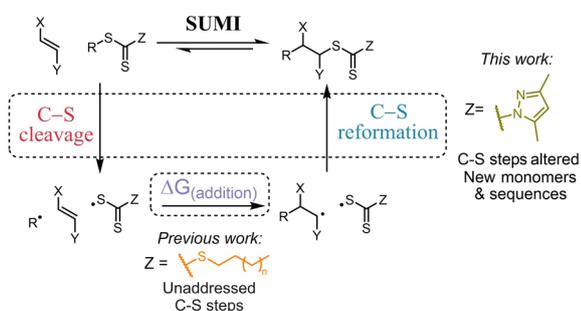
7439



### 3D hierarchical $\text{Ti}_3\text{C}_2/\text{TiO}_2$ composite *via in situ* oxidation for improved lithium-ion storage

Jianlin Zhang, Shan Wei, Qingyun Miao, Huihui Yue, Xiuxia Meng, Fei Wang\* and Naitao Yang\*

7443



### Pyrazole carbodithiolate-driven iterative RAFT single-additions

Karen Hakobyan, Benjamin Noble and Jiangtao Xu\*

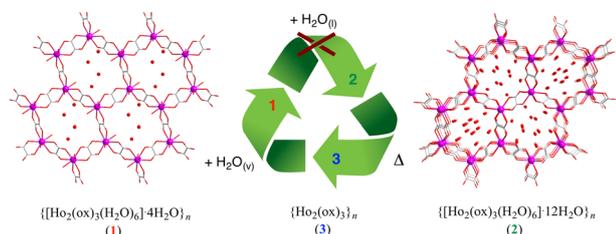
7447



### Triflate anion chemistry for enhanced four-electron zinc–iodine aqueous batteries

Tingting Liu, Chengjun Lei, Huijian Wang, Wei Yang, Xin He and Xiao Liang\*

7451



### Magnetocaloric efficiency tuning through solvent-triggered 3D to 2D interconversion in holmium(III)-based dynamic MOFs

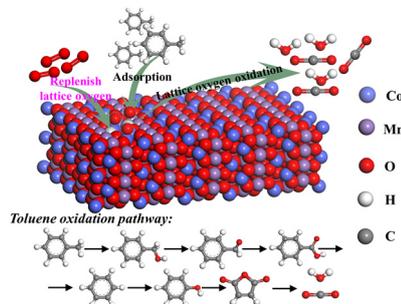
Nadia El Alouani Dahmouni, Marta Orts-Arroyo, Adrián Sanchis-Perucho, Nicolás Moliner, Júlia Mayans, Mario Pacheco, Isabel Castro,\* Giovanni De Munno, Nadia Marino,\* Rafael Ruiz-García and José Martínez-Lillo\*



7455

### A bimetallic MOF-derived MnCo spinel oxide catalyst to enhance toluene catalytic degradation

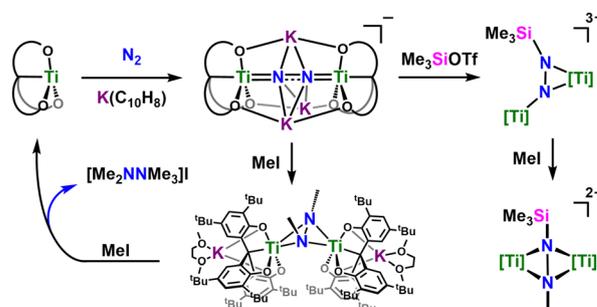
Bin Gao, Fukun Bi, Zhuoxuan Zhou, Yaofei Zhang, Jiafeng Wei, Xutian Lv, Baolin Liu, Yuandong Huang and Xiaodong Zhang\*



7459

### Hydrazido complexes prepared by methylation of an anionic end-on bridging dinitrogen dititanium complex

Yutaka Ishida, Yusuke Nakanishi, Takuma Hiratsuka and Hiroyuki Kawaguchi\*



7463

### Selective electrochemical nitrogen fixation to ammonia catalyzed by a novel microporous vanadium phosphonate *via* the distal pathway

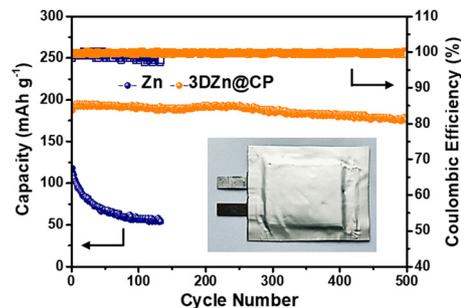
Smruti Vardhan Purohit, Rupali Ipsita Mohanty, Bibek Dash, Piyali Bhanja\* and Bikash Kumar Jena\*



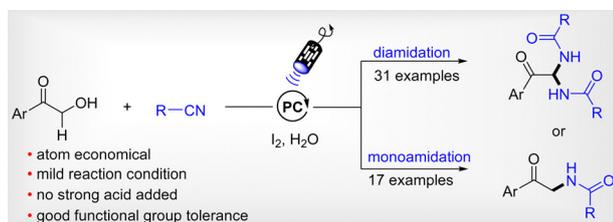
7467

### Fast-charging aqueous batteries enabled by a three-dimensional ordered Zn anode at deliberate concentration polarization

Jinze Li, Eryang Mao, Xiaozhou Ye, Tian Xu, Jie Zheng, Kaiwen Xiao, Bingbing Sun, Ming Ge, Xiaolei Yuan and Zhao Cai\*



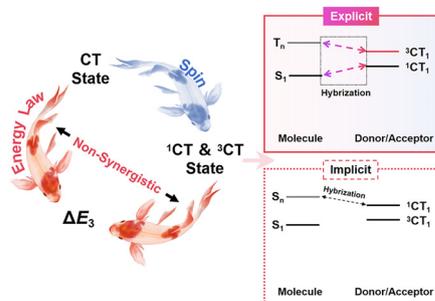
7471



### Visible-light-induced Ritter-type amidation of $\alpha$ -hydroxy ketones in the selective synthesis of $\alpha,\alpha$ -diamido and monoamido ketones

Enrong Tang, Quan-Quan Zhou\* and Jie-Ping Wan\*

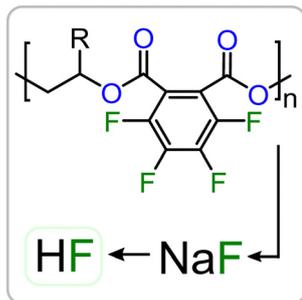
7475



### A hybridization-induced charge-transfer state energy arrangement reduces nonradiative energy loss in organic solar cells

Yue Ren, Ming-Yue Sui, Li-Yuan Peng, Ming-Yang Li,\* Guang-Yan Sun\* and Zhong-Min Su\*

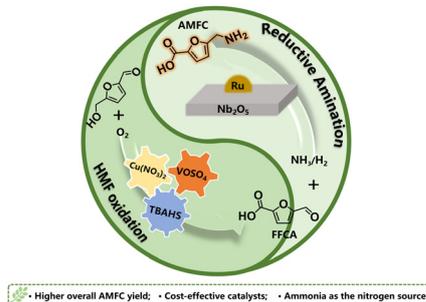
7479



### Fluoride recovery in degradable fluorinated polyesters

Christoph Fornacon-Wood, Merlin R. Stühler, Alexandre Millanvois, Luca Steiner, Christiane Weimann, Dorothee Silbernagl, Heinz Sturm, Beate Paulus and Alex J. Plajer\*

7483



### Hybrid homogeneous/heterogeneous relay catalysis for efficient synthesis of 5-aminomethyl-2-furancarboxylic acid from HMF

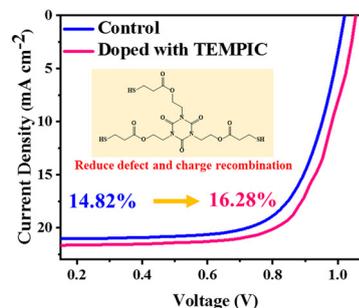
Conglin Zhu, Kaizhi Wang, Feifan Gao, Zehui Sun, Mugeng Chen, Jiachen Fei, Chen Chen, Heyong He, Yongmei Liu\* and Yong Cao\*



7487

### Additive engineering via multiple-anchoring enhances 2D perovskite solar cells' performance

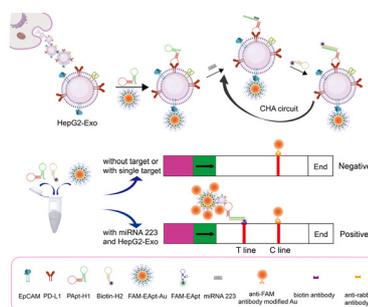
Liangding Zheng, Yuanju Zhao, Rongjun Zhao,\* Lin Xie\* and Yong Hua\*



7491

### A lateral flow assay strip for simultaneous detection of miRNA and exosomes in liver cancer

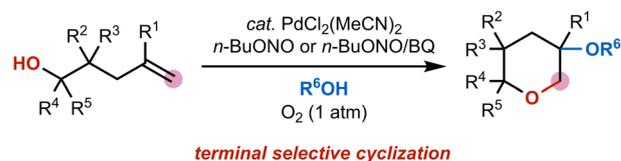
Ruyue Wei, Dawei Wang, Ping Zhou, Yingbo Pan, Xiuyan Wan, Wei Pan, Na Li\* and Bo Tang\*



7495

### Alkyl nitrite-enabled palladium-catalyzed terminal selective oxidative cyclization of 4-penten-1-ols

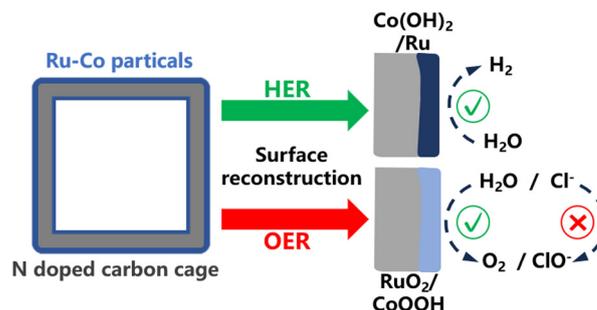
Ayaka Iwanami, Saki Komori and Yasuyuki Ura\*



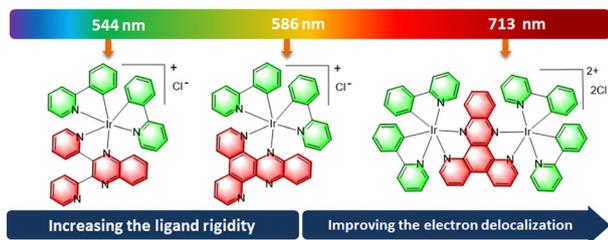
7499

### A N-doped carbon substrate makes the Ru-Co alloy an efficient electrocatalyst for pH-universal seawater splitting

Kang-Yi Xiong, Le-Wei Shen, Yong Wang, Yu Liu, Ming-Xia Hu, Jie Ying, Yu-Xuan Xiao, Ling Shen,\* Ge Tian\* and Xiao-Yu Yang\*



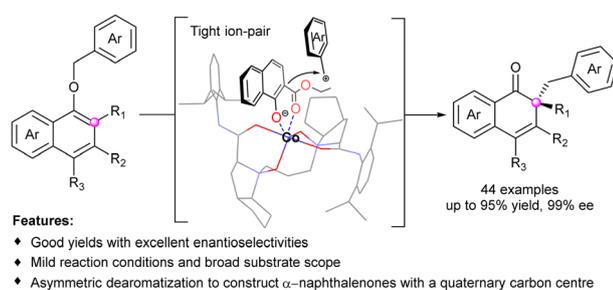
7503



### Molecular engineering of metal-based photosensitizers with narrow band gap for efficient photodynamic therapy

Pengmin Shi, Wenqi Gong, Jian Zhao,\* Yubo Jiao, Yanyan Sun, Lei Fang\* and Shaohua Gou\*

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### Asymmetric dearomatization of benzyl 1-naphthyl ethers via [1,3] O-to-C rearrangement

Hongkun Zeng, Gang Wen, Lili Lin\* and Xiaoming Feng\*

