

# ChemComm

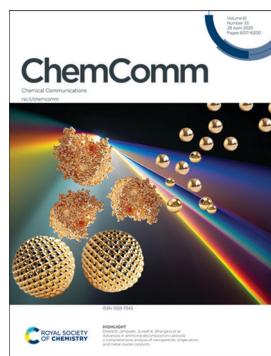
Chemical Communications

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## IN THIS ISSUE

ISSN 1359-7345 CODEN CHCOFS 61(33) 6017-6200 (2025)



### Cover

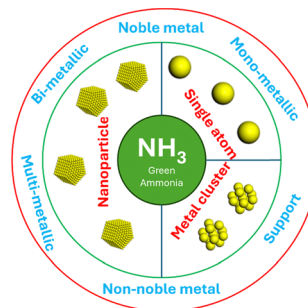
See Deshetti Jampaiah, Suresh K. Bhargava *et al.*, pp. 6027-6054. Image reproduced by permission of Suresh K. Bhargava from *Chem. Commun.*, 2025, **61**, 6027. Created with Canva.com.

## HIGHLIGHT

6027

### Advances in ammonia decomposition catalysis: a comprehensive analysis of nanoparticle, single-atom, and metal cluster catalysts

Pallavi Saini, Deshetti Jampaiah,\* Selvakannan Periasamy, Aniruddha P. Kulkarni and Suresh K. Bhargava\*

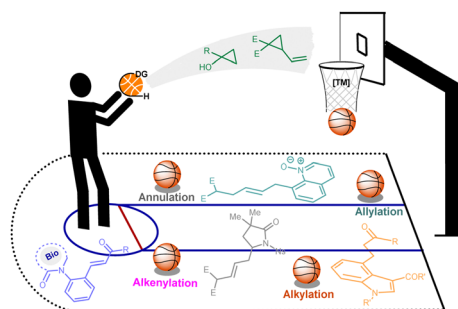


## FEATURE ARTICLES

6055

### Transition-metal-catalyzed auxiliary-assisted C-H functionalization using vinylcyclopropanes and cyclopropanols

Shubhajit Basak, Tripti Paul, Santu Mandal, Madhab Barman, Maniya V Nanjgowda and Tharmalingam Punniyamurthy\*



# Environmental Science: Atmospheres

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Fundamental questions  
Elemental answers

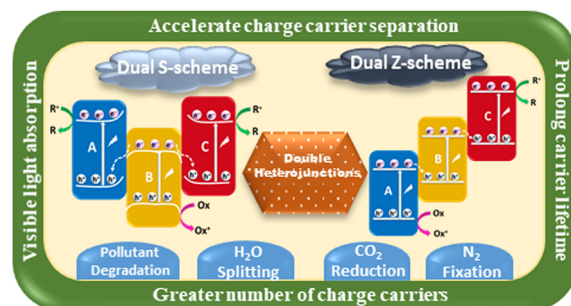


## FEATURE ARTICLES

6069

### Double heterojunction photocatalysts: strategic fabrication and mechanistic insights towards sustainable fuel production

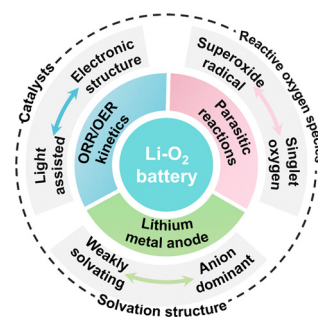
Soumita Samajdar, Maitrayee Biswas, Dipendu Sarkar, Jishu Pramanik, Jayanta Mukhopadhyay and Srabanti Ghosh\*



6095

### Recent advances and perspectives of Li–O<sub>2</sub> batteries

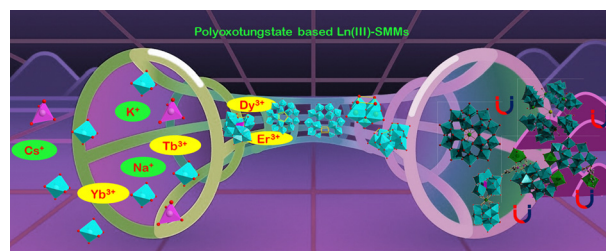
Bo Wen, Lang Zhou, Yuzhe Wang and Fujun Li\*



6105

### Epitome of polyoxotungstate-coordinated lanthanide-based single-molecule magnets

Pradip Kumar Sahu, Sandhya Kapurwan and Sanjit Konar\*

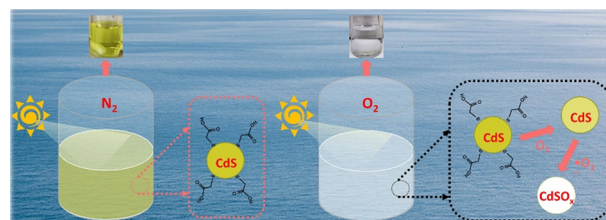


## COMMUNICATIONS

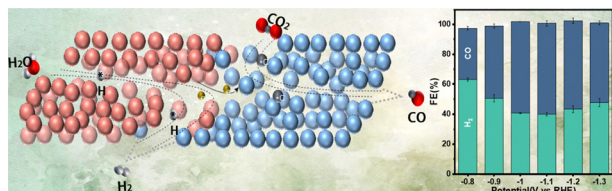
6118

### Unraveling the role of superoxide radicals in CdS quantum dot instability

Miaoli Gu, Xianglin Xiang, Bei Cheng, Jiaguo Yu\* and Liuyang Zhang\*



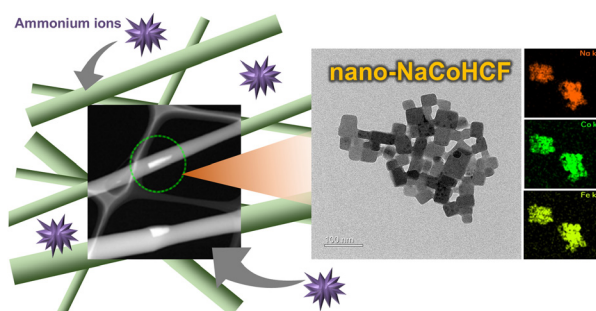
6122



### *In situ* construction of a built-in electric field for efficient CO<sub>2</sub> electroreduction

Zikang Qiao, Xiang Han, Tingjie Mao, Zhenrui Yang, Jinglian Huang, Shun Wang, Ping Yu,\* Juan Wang\* and Huile Jin\*

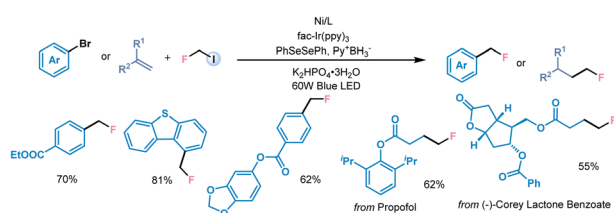
6126



### Effect of nanosizing on sodium cobalt(II) hexacyanoferrate(II) nanoparticles in nanofibers for enhanced ammonium adsorption capacity

Makoto Sasaki and Mitsuhiro Ebara\*

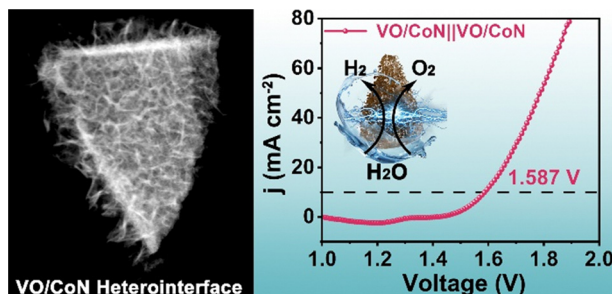
6130



### Halogen-atom transfer of fluoriodomethane for photoredox-catalyzed fluoromethylation

Chunyu Chen, Weigang Zhang, Xiaochen Wang, Yi Pan, Yu Mao\* and Yi Wang\*

6134



### Heterointerface engineering of vanadium oxide/cobalt nitride as efficient electrocatalysts for alkaline overall water splitting

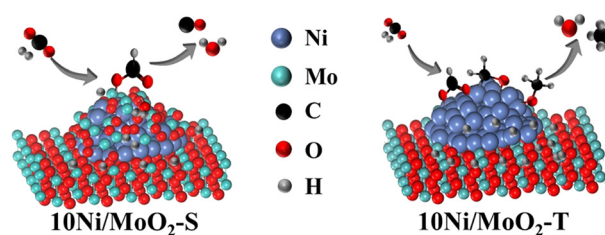
Tengfei Xu, Zhaohui Lu, Lan Yu, Wen Xin, Jie Sun, Haoze Zhou, Yanqing Jiao, Xiwen Wang\* and Chunmei Lv\*



6138

### A heat treatment method-induced product selectivity switch for CO<sub>2</sub> reduction over Ni/MoO<sub>2</sub>

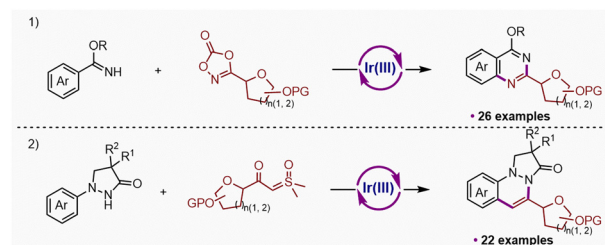
Jie Zhao,\* Tao Zhang, Xiaolong Zhang, Ruixue Bao, Ruru Sun and Chuanyi Wang



6142

### Synthesis of 2-glycosyl-quinazolines and 5-glycosyl-pyrazolo[1,2-a]cinnolines by Cp\*Ir(III)-catalyzed C–H activation/cyclization

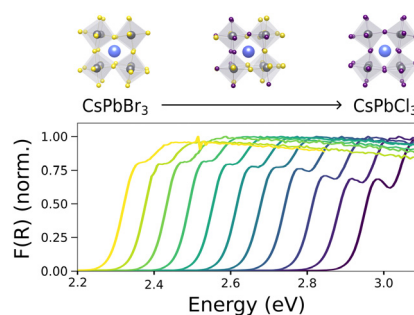
Xin-Yue Hu, Deng-Yin Liu, Cong-Zhen Zhang, Miao-Miao Wen, Xiao-Xi Ren, Shang-Shi Zhang\* and Xu-Ge Liu\*



6146

### An experimental data library for the full CsPb(Cl<sub>x</sub>Br<sub>1-x</sub>)<sub>3</sub> compositional series

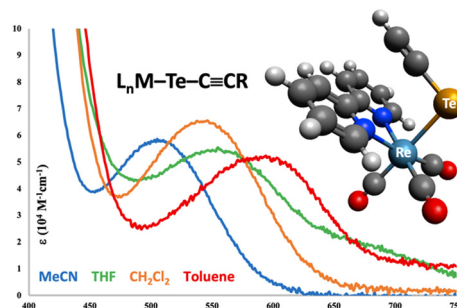
Kinga O. Mastej, Bodo Batnaran, Antti-Pekka M. Reponen, Zachary A. VanOrman, Kal Banger, Michael A. Hayward, Volker L. Deringer\* and Sascha Feldmann\*



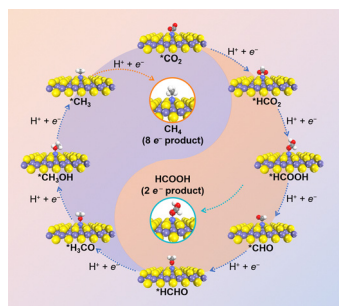
6150

### Alkynyltelluroolato ligands including a solvatochromic rhenium(I) complex

Liam K. Burt, Ryan M. Kirk and Anthony F. Hill\*



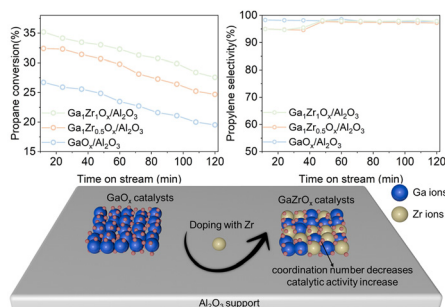
6154



### Boosting CO<sub>2</sub> reduction catalyzed by tetragonal metal chalcogenides: a DFT study

Fei Yang, Xu Huang, Chengfang Yang, Chao Su and Beibei Xiao\*

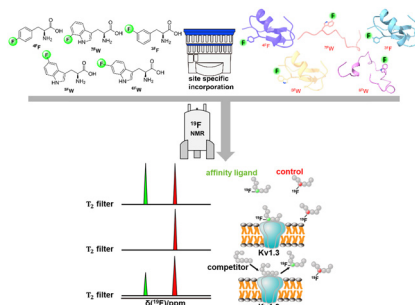
6158



### Zr element promotes gallium oxide-based catalyst activity for direct dehydrogenation of propane

Mingxin Lv, Qiang Li,\* Yue Zhu, Jianrong Zeng, Qiheng Li, Xin Chen, Kun Lin, Jinxia Deng and Xianran Xing\*

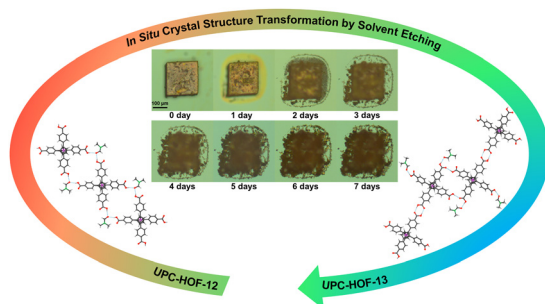
6162



### <sup>19</sup>F NMR chemical shift encoded peptide screening targeting the potassium channel Kv1.3

Yong Zhang, Yongjie Zhu, Yi Zhang, Chaowei Shi, Longhua Zhang, Jun Liang,\* Changlin Tian\* and Pan Shi\*

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### Solvent-etching-induced *in situ* crystal structure transformation in hydrogen-bonded organic frameworks

Xiaokang Wang, Hongyan Liu, Meng Sun, Fei Gao, Xueying Feng, Mingming Xu, Yutong Wang, Weidong Fan\* and Daofeng Sun\*

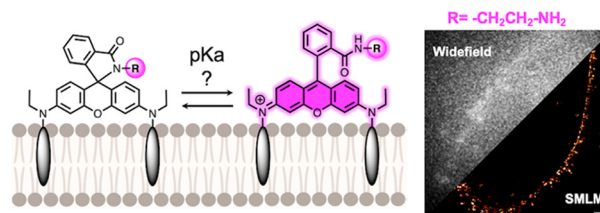


## COMMUNICATIONS

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## Spontaneously blinking spiroamide rhodamines for live SMLM imaging of the plasma membrane

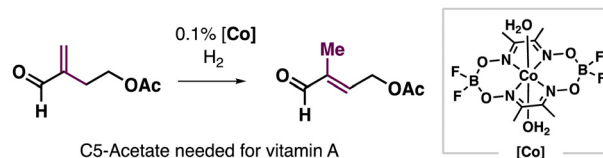
Sonia Pfister, Sophie Walter, Aurélie Perrier and Mayeul Collot\*



6174

## Co(II)-catalyzed isomerization of enals using hydrogen atom transfer

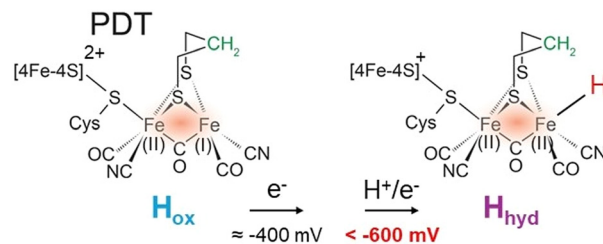
Qiqige Qiqige, Edward Richmond,\* Rocco Paciello, Mathias Schelwies and Rylan J. Lundgren\*



6178

## Terminal hydride formation in [FeFe] hydrogenase: understanding the role of the dithiolate bridgehead

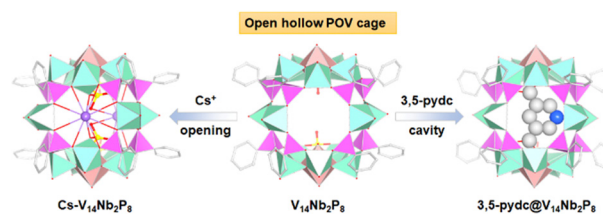
Anjali Depala, Manon T. Lachmann, Simone Morra, James A. Birrell\* and Patricia Rodriguez-Maciá\*



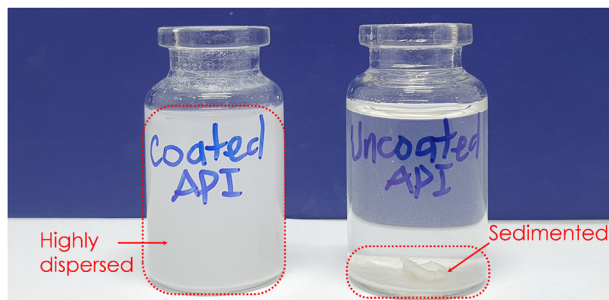
6182

## An open hollow polyoxovanadate cage based on {Nb(V5)} pentagons with size-selective encapsulation properties

Renbo Fang, Di Zhang, Jing Dong,\* Yeqin Feng, Chengpeng Liu, Liaoyuan Yao, Yingnan Chi\* and Changwen Hu



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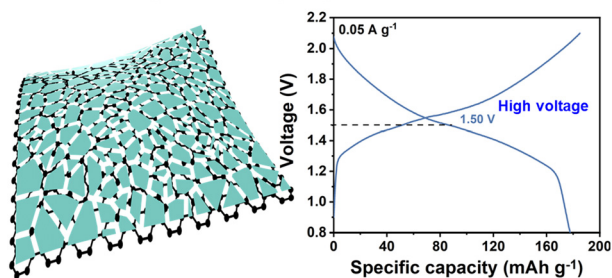


### Stable dispersion and prolonged dissolution of hydrophilic pharmaceutical achieved by room-temperature atmospheric pressure atomic layer deposition

Viet Phuong Cao, Kim-Hue Thi Dinh, Truong Duc Dinh, Phi Huu Bui, Tuan Hiep Tran and Hao Van Bui\*

6190

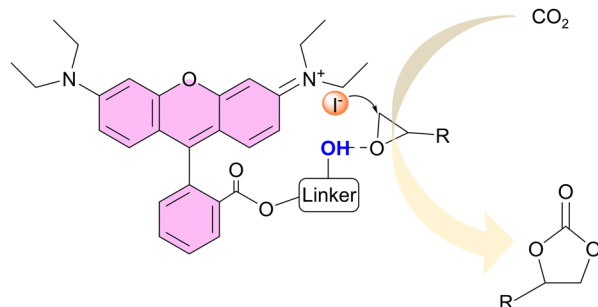
### 2D Amorphous VOPO<sub>4</sub>/Graphene Heterostructure



### A two-dimensional amorphous VOPO<sub>4</sub>/graphene heterostructure for high-voltage aqueous Zn-ion batteries

Jinxing Jiang, Yihong Huang, Zhigang Fan,\* Yaqin Cui, Xianyu Liu\* and Xinyu Wang\*

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### Bifunctional dye-based organocatalysts with enhanced activity in the conversion of CO<sub>2</sub> into cyclic carbonates

Jing Chen and Paolo P. Pescarmona\*

