

# ChemComm

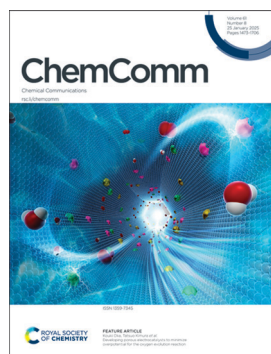
Chemical Communications

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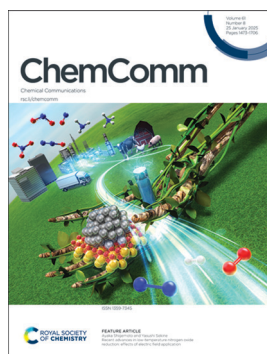
## IN THIS ISSUE

ISSN 1359-7345 CODEN CHCOFS 61(8) 1473-1706 (2025)



### Cover

See Kouki Oka, Tatsuo Kimura *et al.*, pp. 1533–1558. Image reproduced by permission of Tatsuo Kimura from *Chem. Commun.*, 2025, 61, 1533.



### Inside cover

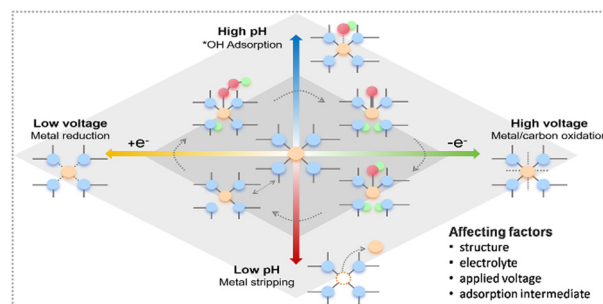
See Ayaka Shigemoto and Yasushi Sekine, pp. 1559–1573. Image reproduced by permission of Yasushi Sekine from *Chem. Commun.*, 2025, 61, 1559.

## HIGHLIGHTS

1485

### Dynamic evolution of metal–nitrogen–codoped carbon catalysts in electrocatalytic reactions

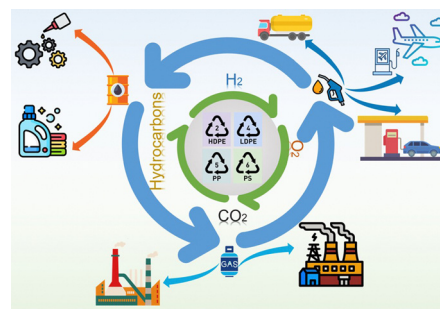
Zixuan Han, Yanmei Shi, Bin Zhang\* and Lingjun Kong\*



1496

### Heterogeneous catalysis strategies for polyolefin plastic upcycling: co-reactant-assisted and direct transformation under mild conditions

Haokun Wang, Sijie Huang and Shik Chi Edman Tsang\*



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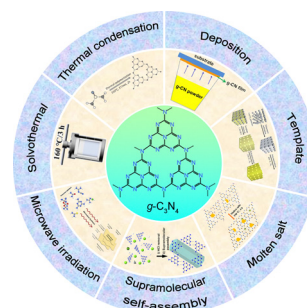
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## HIGHLIGHTS

1509

## Recent advances in the design and preparation of graphitic carbon nitride for photocatalysis

Yuxuan Tong, Jiawei Xia, Yongke Hu, Yuming He, Guangyu He\* and Haiqun Chen\*

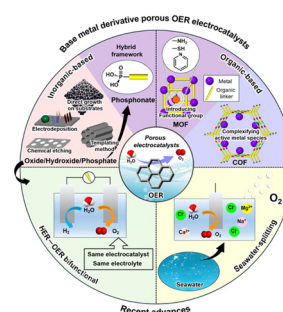


## FEATURE ARTICLES

1533

## Developing porous electrocatalysts to minimize overpotential for the oxygen evolution reaction

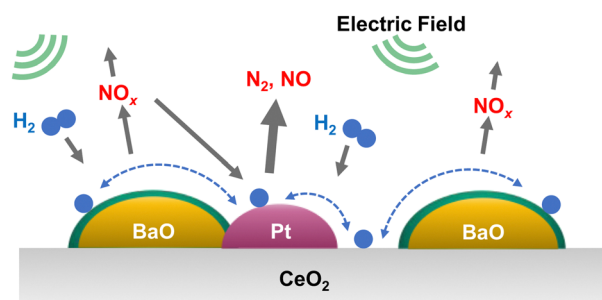
Takahiro Ami, Kouki Oka,\* Hitoshi Kasai and Tatsuo Kimura\*



1559

## Recent advances in low-temperature nitrogen oxide reduction: effects of electric field application

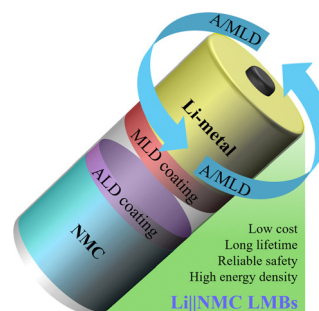
Ayaka Shigemoto\* and Yasushi Sekine\*



1574

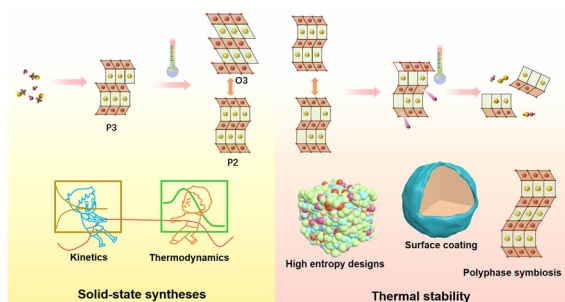
## Accurately constituting robust interfaces for high-performance high-energy lithium metal batteries

Kevin Velasquez Carballo, Meetesh Singh and Xiangbo Meng\*



## FEATURE ARTICLES

1589

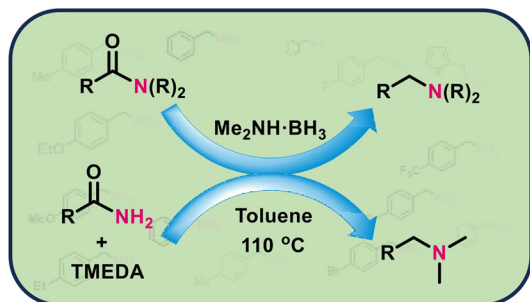


## Phase evolutions of sodium layered oxide cathodes during thermal fluctuations

Yi-Chi Zhang, Min Hou, Han-Xiao Liu, Hui Cao, Liang Deng, Yan-Fang Zhu, Yan-Jiang Li,\* Zhen-Bo Wang\* and Yao Xiao\*

## COMMUNICATIONS

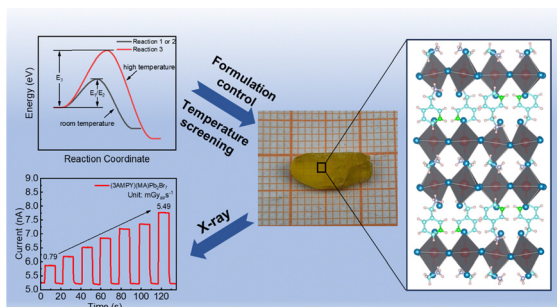
1605



## Unlocking an additive-free and catalyst-free dual approach for reduction of amides to amines

Deep Chowdhury and Arup Mukherjee\*

1609



## Growth window optimization for large-size quasi-two-dimensional Dion–Jacobson type perovskites

Yinghao Fan, Hang Yin, Xinyi Li, Jiafu Yu, Yue Hu, Yuting Gao\* and Guangda Niu\*

1613



## Bioinspired design of DNA in aqueous ionic liquid media for sustainable packaging of horseradish peroxidase under biotic stress

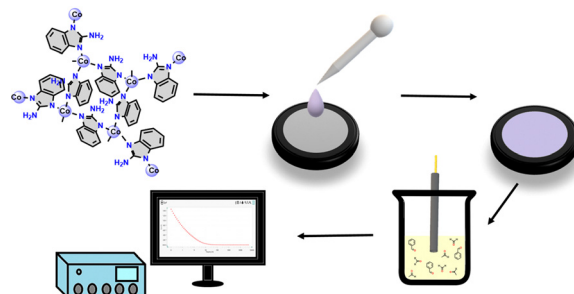
Diksha Dhiman, Aaftaab Sethi, Rakesh Sinha, Sagar Biswas, Gregory Franklin and Dibyendu Mondal\*



1617

### Systematic study of zeolitic imidazolate frameworks for enhanced electrochemical aldehyde sensing

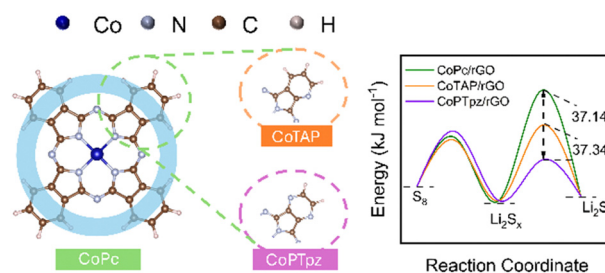
Martyna Mańka, Wojciech Kukułka, Mateusz Wlazto, Violetta Patroniak,\* Artur Ciesielski, Verónica Montes-García\* and Paolo Samori\*



1621

### N skeleton-regulated cobalt phthalocyanine promotes polysulfide adsorption and redox kinetics

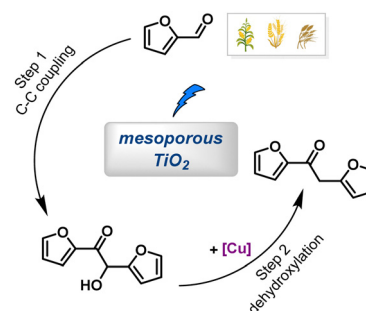
Jiaqi Zhao, Zhanwei Xu,\* Yujiao Zhang, Kai Yao, Liang Li, Hang Niu, Jiayin Li and Zhi Li\*



1625

### Photocatalytic reductive coupling of furfural into deoxyfuroin on mesoporous TiO₂

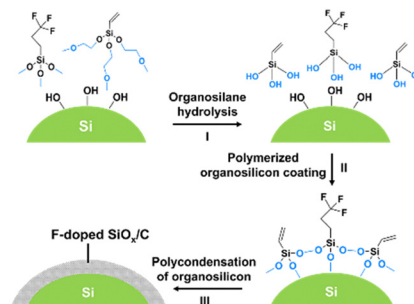
Beibei Gao, Shuxian Wang, Min Liu, Jialing Ma, Tianliang Lu\* and Hongji Li\*



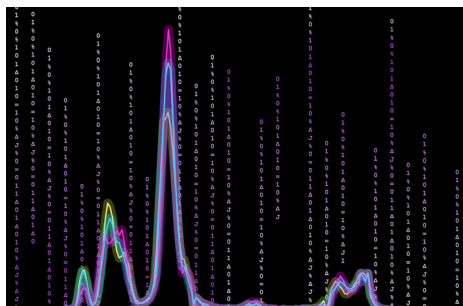
1629

### Fluorinated organosilane polycondensation enables a robust Si anode for lithium storage

Zhengyue Li, Jiecheng Huang and Zhiyu Wang\*



1633

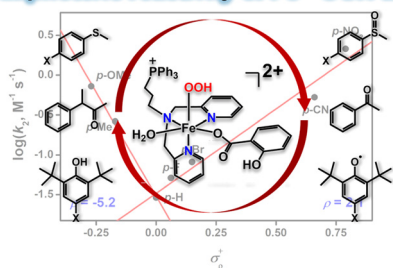


### Discrimination of nucleoside phosphates using principal component analysis of spectral changes in a single europium complex

Leila R. Hill,\* Elizabeth J. New and Stephen Faulkner

1637

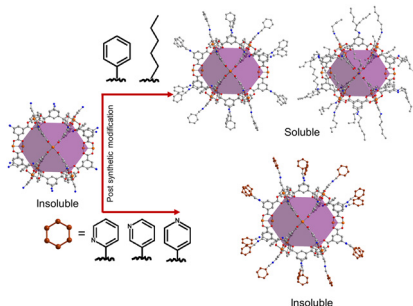
### Amphoteric reactivity of Fe<sup>III</sup>-OOH at RT



### Amphoteric reactivity of iron(III)-hydroperoxo complex generated from proton- and salicylate-assisted dioxygen activation

Chaewon An, Hyeri Jeon, Yool Lee, Geonwoo Park, Hyun S. Ahn\* and Seungwoo Hong\*

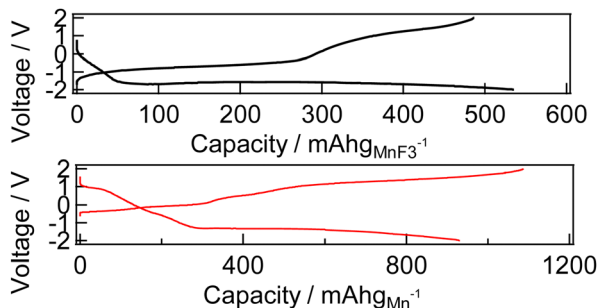
1641



### Post-synthetic modification of amine-functionalized permanently porous coordination cages

Jahidul Hoq, Michael R. Dworzak, Duleeka Dissanayake, Rebecca X. Skalla, Nobuyuki Yamamoto, Glenn P. A. Yap and Eric D. Bloch\*

1645



### Manganese electrode for all-solid-state fluoride batteries

Atsushi Inoishi,\* Naoko Setoguchi, Megumi Motoyama, Shigeto Okada and Hikari Sakaebe

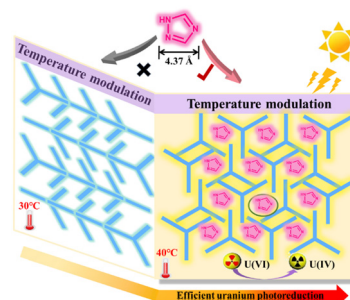


## COMMUNICATIONS

1649

### Hydrogen bonded organic framework pores differentially loading triazole for photocatalytic uranium reduction

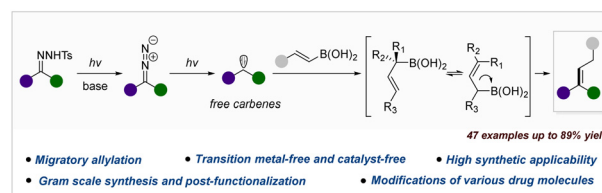
Qiong Wu, Ying-Ao Wang, Xun Wang, Qiao-Qiao Jiang, Ya-Jie Li, Ru-Ping Liang\* and Jian-Ding Qiu\*



1653

### Photoinduced synthesis of trisubstituted allylic molecules via migratory allylation of olefins

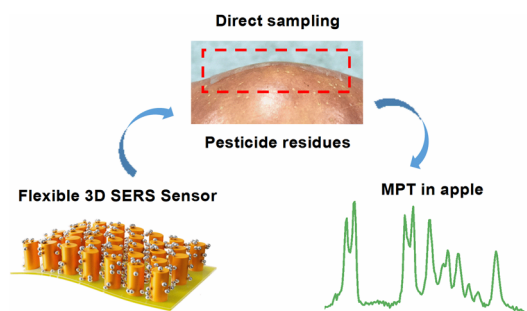
Dingding Xia, Na Zhang, Mingdong Zhong, Weijie Wang, Qiannan Li, Yu Zhang\* and Wei-Dong Zhang\*



1657

### A flexible 3D ordered SERS sensor for rapid and reliable detection of pesticide residues in fruits

Han Lu, Guangfei Huang, Dan Wang, Qilin Ma, Yuan Zhang, Mingliang Jin\* and Lingling Shui\*



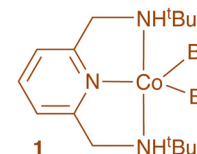
1661

### Cobalt-catalyzed reduction of esters to alkanes

Manas Kumar Sahu, Sandip Pattanaik and Chidambaram Gunanathan\*



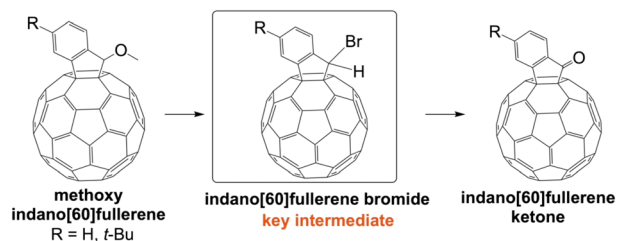
- ❖ Earth abundant base metal catalyst
- ❖ Substoichiometric amount of base
- ❖ Si-H & C-O bond activations
- ❖ Valuable methyl & allyl arenes



## COMMUNICATIONS

1665

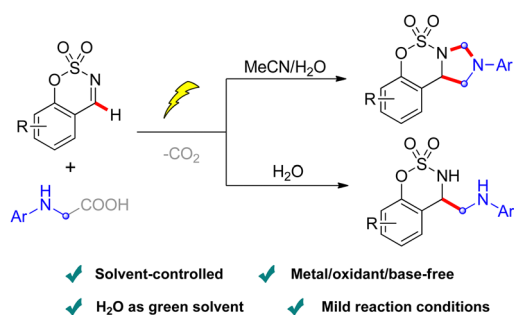
Oxidation-reduction reaction pathway



## Reaction mechanism with indano[60]fullerene bromide for evaporable fullerene derivatives

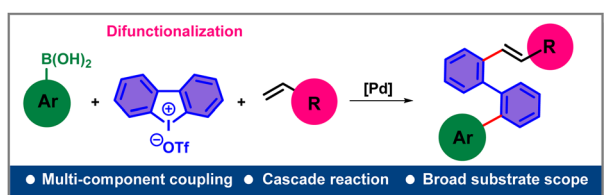
Hirofumi Amada, Yong-Chang Zhai, Koki Yamanaka, Qing-Jun Shui, Kin-ichi Oyama, Kazuhira Miwa, Hao-Sheng Lin and Yutaka Matsuo\*

1669

Electro-catalyzed, solvent-controlled divergent decarboxylative annulation and hydroaminomethylation of cyclic aldimines with *N*-arylglycines

Jie Zhang, Xiaolan Li, Guisheng Chen, Haidong Liu\* and Haiqing Luo\*

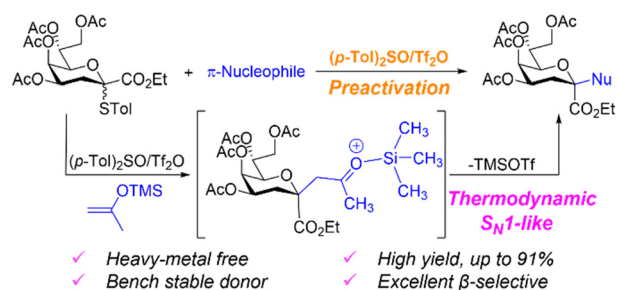
1673



## Suzuki–Miyaura/Mizoroki–Heck coupling cascade to access 2,2'-bifunctionalized biaryls

Naveen Kumar Maurya, Anushka Singh, Ankita Sahu, Asit Kumar, Ruchir Kant, Vishal Govind Rao,\* Sanjeev K. Shukla\* and Malleswara Rao Kuram\*

1677

β-Stereoselective Kdo C-glycosylation by a (*p*-Tol)<sub>2</sub>SO/Tf<sub>2</sub>O preactivation strategy

Jing-dong Zhang, Guang-jian Liu and Guo-wen Xing\*

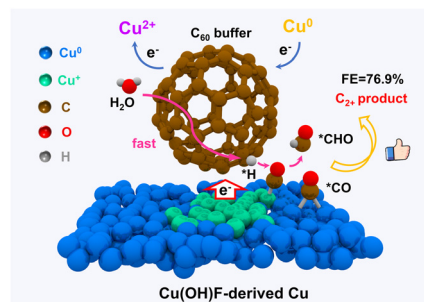


## COMMUNICATIONS

1681

### Construction of stable $\text{Cu}^+/\text{Cu}^0$ sites at the fullerene/ $\text{Cu}(\text{OH})\text{F}$ interface to boost the electroreduction of $\text{CO}_2$ to $\text{C}_{2+}$ products

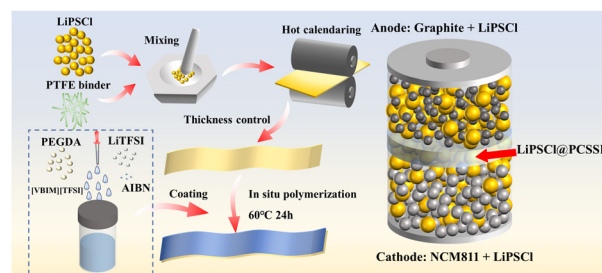
Xiao-Wan Xiong, Xin-Yue Wu, Yuan-Sheng Cheng,\*  
Delei Yu, Xu-Dong Xu, Yuwen Cheng, Fang-Hui Wu and  
Xian-Wen Wei\*



1685

### In situ constructed polymer-layer-modified solid electrolyte enables high-performance all-solid-state batteries

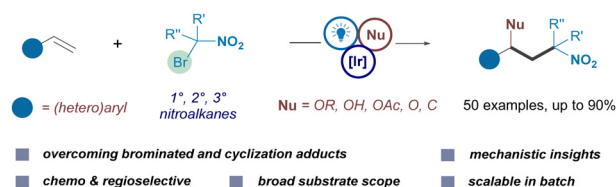
Jikang Liu, Lucheng Cai, Jun Peng, He Teng, Linyan Li,  
Daoyan Feng, Huihao Li, Jonghee Lee, Hangjun Ying and  
Wei-Qiang Han\*



1689

### Photoredox radical/polar crossover enables carbo-heterofunctionalization of alkenes: facile access to 1,3-difunctionalized nitro compounds

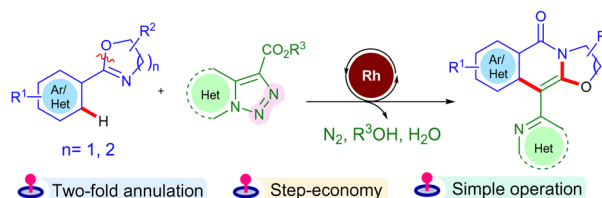
Subrata Patra, Vasiliki Valsamidou, Bhargav N. Nandasana  
and Dmitry Katayev\*



1693

### Integrating C–H activation/2-fold annulation: a modular access to heteroaryl-tethered oxazoloisoquinolinones

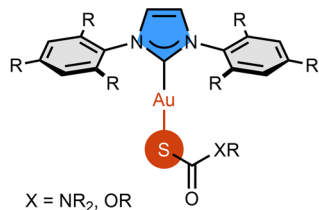
Shubhajit Basak, Tripti Paul, Maniya V Nanjegowda and  
Tharmalingam Punniyamurthy\*



1697

**NHC-Au(I)-Xanthate Complexes**

- ✓ excellent stability
- ✓ catalytically competent as  $\pi$ -acid under silver-free conditions
- ✓ efficient photocatalyst
- ✓ selective cytotoxic activity

**NHC–Au–xanthate complexes**

Supratim Chakraborty, Aleksander Gorski, Oksana Danylyuk, Katarzyna Niemirowicz-Laskowska, Halina Car and Michał Michalak\*

1701

**A selective non-enzymatic synthesis of ribose simply from formaldehyde, metal salts and clays**

Hao-Xing Xu, Ze-Run Zhao and Xiao Wang\*

