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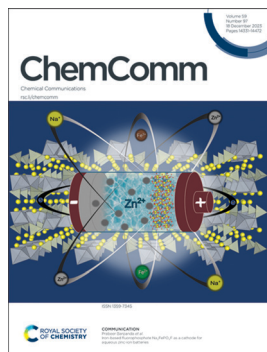
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ISSN 1359-7345 CODEN CHCOFS 59(97) 14331-14472 (2023)



Cover

See Zhanhong Wu, Joseph M. Fox, Zibo Li *et al.*, pp. 14387–14390. The image is designed, generated and reproduced by permission of Dr Xuedan Wu from the Li lab and Sci-Shine Studio Co., Ltd. See *Chem. Commun.*, 2023, 59, 14387.



Inside cover

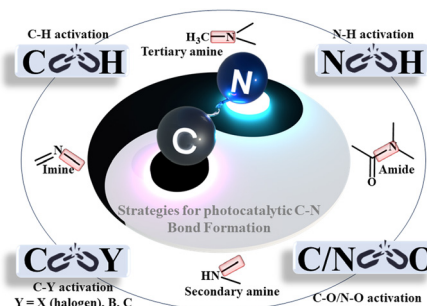
See Prabeer Barpanda *et al.*, pp. 14391–14394. Image reproduced by permission of Prabeer Barpanda from *Chem. Commun.*, 2023, 59, 14391.

HIGHLIGHT

14341

Photocatalytic C–N bond construction toward high-value nitrogenous chemicals

Jie Li, Tengyu Liu, Nittan Singh, Zhuochun Huang, Yan Ding, Jinshu Huang, Putla Sudarsanam* and Hu Li*

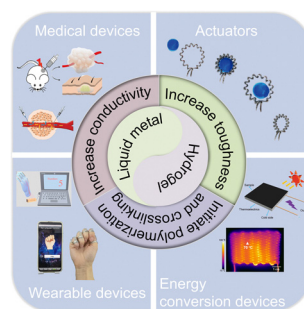


FEATURE ARTICLES

14353

Liquid metal–hydrogel composites for flexible electronics

Jianhui Chen, Gongwei Tian, Cuiyuan Liang, Dan Yang, Qinyi Zhao, Yan Liu* and Dianpeng Qi*



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meta-Fluorophores: an uncharted ocean of opportunities

Single Benzenic Fluorophores with *meta*-oriented single *D-A* pair

<p>Feasibility of CT :</p> <p>Existing concept :</p> <p><i>para</i> : ✓ <i>meta</i> : ✗</p> <p>CT : Charge Transfer <i>D</i> : CT Donor <i>A</i> : CT Acceptor</p>	<p>Excellent Properties of MFs :</p> <p>MF :</p> <p>Single Benzenic Fluorophores with <i>meta</i>-oriented single <i>D-A</i> pair</p> <ul style="list-style-type: none"> • Ultra-light (~200 g/mol) • High PLQY = 63% • Stokes shift = 260 nm • Solvatochromic shift = 175 nm • Excited state lifetime = 26 ns 	<p>Wide Colour Gamut</p> <p>Solution state :</p> <p>Solid state :</p> <p>Applications :</p> <p>White - LED</p> <p>Sub-cellular nanopolarity</p>
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COMMUNICATIONS

Development of ^{18}F -Labeled hydrophilic *trans*-cyclooctene as a bioorthogonal tool for PET probe construction

$[^{18}\text{F}]\mathbf{3}$ (LogP = 0.28)
 Most Hydrophilic TCOQ Species

Small Molecule
 or Protein

mixing
 $< 1 \text{ min}$

purification
 5 - 40 min

Dose

in vivo
 PET imaging

Iron-based fluorophosphate $\text{Na}_2\text{FePO}_4\text{F}$ as a cathode for aqueous zinc-ion batteries

Charge (1.8V)
Desodiation

Discharge (0.2V)
Zn-ion insertion

$\text{Na}_2\text{FePO}_4\text{F}$ $\text{NaFePO}_4\text{F} + \text{Zn}$ $\text{Zn}_{0.5}\text{Na}_{0.5}\text{FePO}_4\text{F}$

Iron-optimized oxygen vacancy concentration to strengthen the electrocatalytic ability of the urea oxidation reaction

Figure 1 Synthesis, structure, and electrocatalytic activity of Fe-Ni(OH)₂@NiSe₂. (a) SEM image of the catalyst. (b) Schematic of the 3D porous structure. (c) Bar chart of E vs. RHE for OER, AOR, UOR, and MOR. (d) Chronopotentiometry plot showing potential over time with electrolyte renewals.

(c) E vs. RHE for different reactions:

Reaction	ΔE (mV)	Selectivity ($j = 100 \text{ mA cm}^{-2}$)
OER	132.5	~1.65
AOR	122.5	~1.52
UOR	197.8	~1.46
MOR	188.3	~1.48

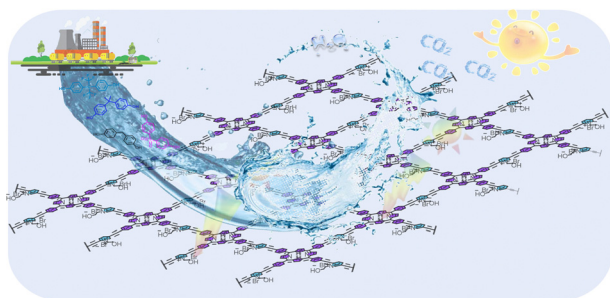
(d) Chronopotentiometry plot:

Electrolyte: 1.0 M KOH + 0.33 M Urea
 UOR, $j = 50 \text{ mA cm}^{-2}$

The plot shows potential (E vs. RHE) over time (h) from 0 to 120 hours. The potential remains stable around 1.4 V vs. RHE, with periodic renewals of the electrolyte indicated by arrows at 24, 48, 72, 96, and 120 hours.

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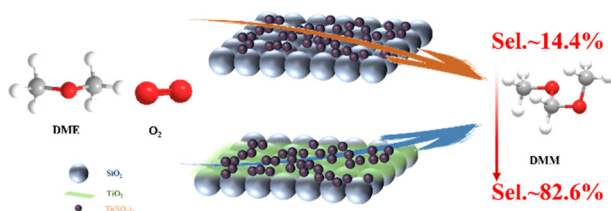
14399



Post-cationic modification of a porphyrin-based conjugated microporous polymer for enhanced removal performance of bisphenol A

Shiyuan Zhou, Xiaobo Luo, Yan Zhang, Yuxi Liu, Xin Wang, Xiaoqiong Hao, Ye Zhang, Danfeng Wang, Peiyang Gu* and Guangfeng Liu*

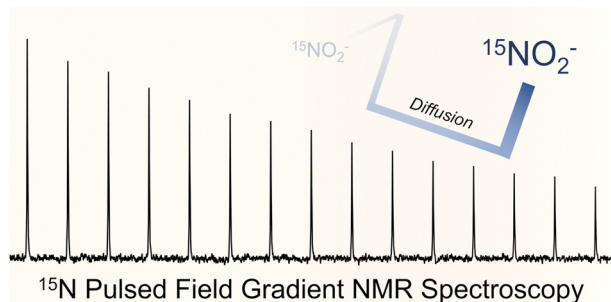
14403



Introduction of TiO₂ enhancing the catalytic performance of Ti(SO₄)₂/SiO₂ for dimethyl ether oxidation

Guozhuang Cao, Xiujuan Gao,* Faen Song, Xiaqing Wang, Xiaoxing Wang, Junfeng Zhang, Yizhuo Han and Qingde Zhang*

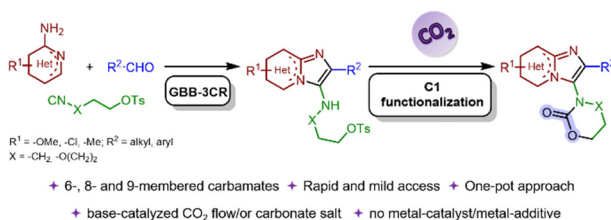
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Tracking nitrite's deviation from Stokes–Einstein predictions with pulsed field gradient ¹⁵N NMR spectroscopy

Trent R. Graham,* Yihui Wei, Eric D. Walter, Emily T. Nienhuis, Jaehun Chun, Gregory K. Schenter, Kevin M. Rosso, Carolyn I. Pearce and Aurora E. Clark

14411



C1 functionalization of imidazo heterocycles via carbon dioxide fixation

Michael Fragkiadakis, Paraskevi-Kleio Anastasiou, Ioannis Volrakis, Apostolos Pantousas, Constantinos C. Stoumpos and Constantinos G. Neochoritis*

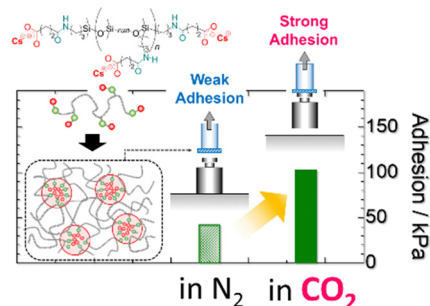


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CO₂ switchable adhesion of ionic polydimethylsiloxane elastomers

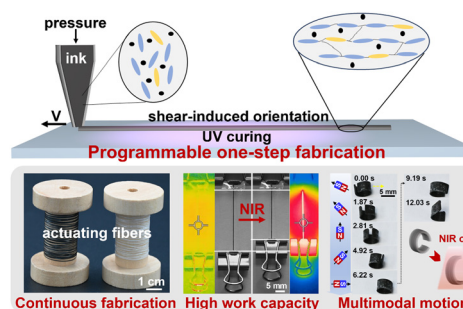
Yohei Miwa,* Masatoshi Tsunoda, Shoei Shimozaki, Rina Sawada and Shoichi Kutsumizu



14419

Multimode opto-magnetic dual-responsive actuating fibers and fabrics programmed via direct ink writing

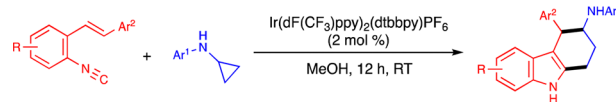
Bingyue Cai, Xian Li, Hui Wang, Hengda Sun,* Ru Xiao, Hongzhi Wang and Gang Wang*



14423

Synthesis of 3-aminotetrahydro-1*H*-carbazols by visible-light photocatalyzed cycloaddition of cyclopropylanilines with 2-alkenylarylisocyanides

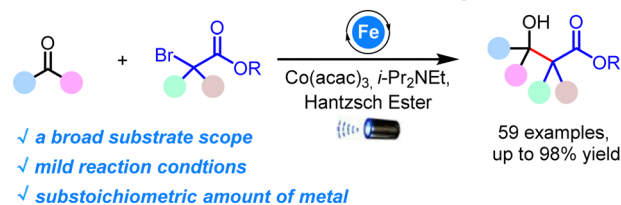
Xiaofei Zhang,* Yao Wang, Jiaxin Liu, Chengpeng Tian, Xiang Li, Pan Xie, Zhenyu Zhu* and Tuanli Yao*



14427

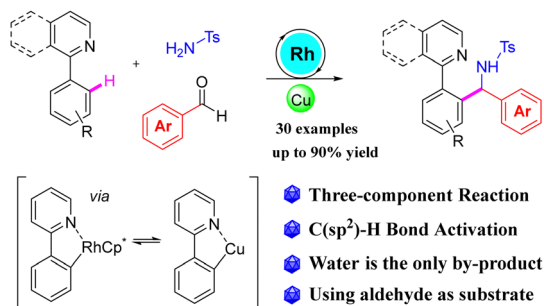
Photoinduced reductive Reformatsky reaction of α -haloesters and aldehydes or ketones by cooperative dual-metal catalysis

Qi-Long Chen, Le Mao, Yi-Fan Pan, Heng Cai, Xiao-Ming Zhang,* Fu-Min Zhang, Ai-Jun Ma, Jin-Bao Peng and Yong-Qiang Tu



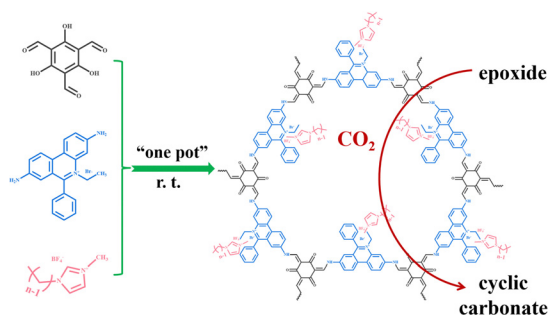
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**Rhodium(III)-catalyzed three-component C(sp²)-H activation for the synthesis of amines**

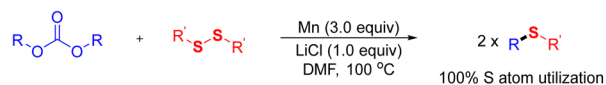
Min Lin, Yu-Fei Wu, Zheng-Qiang Liu, Cheng Liang, Qing-Hua Li* and Tang-Lin Liu*

14435

**In situ rapid synthesis of ionic liquid/ionic covalent organic framework composites for CO₂ fixation**

Zhifeng Xu, Wenting Wang, Bowei Chen, Haitao Zhou, Qiufang Yao, Xianjie Shen, Yuchen Pan, Dongxian Wu, Yongyong Cao, Zhangfeng Shen, Yanan Liu, Qineng Xia, Xi Li, Xiaoqin Zou,* Yangang Wang* and Lingchang Jiang*

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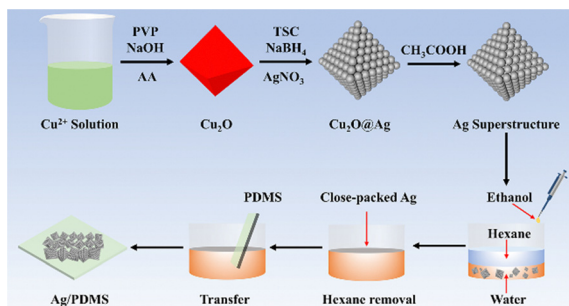


Inexpensive manganese Simple conditions Easily available substrates

Manganese-promoted reductive cross-coupling of disulfides with dialkyl carbonates

Chao-Peng Zhang, Tian-Zhang Wang and Yu-Feng Liang*

14443

**High-performance SERS chips for sensitive identification and detection of antibiotic residues with self-assembled hollow Ag octahedra**

Lu Tan, Yongbing Lou* and Jun-Jie Zhu*

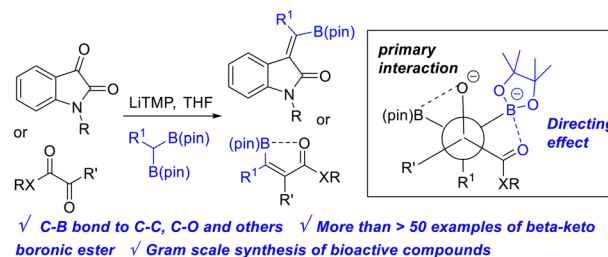


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Carbonyl group directed synthesis of 3-boryl-3-substituted alkenyl oxindoles and tetrasubstituted β -borylenones

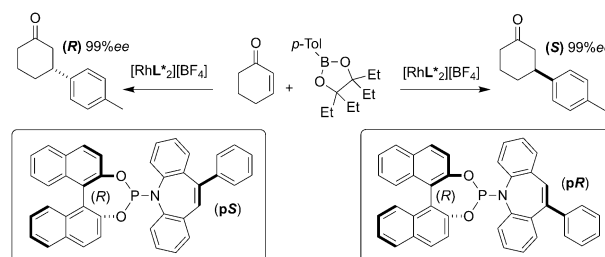
Debraj Ghorai, Kanak Kanti Das and Santanu Panda*



14451

Evolution of a 'privileged' P-alkene ligand: added planar chirality beats BINOL axial chirality in catalytic asymmetric C–C bond formation

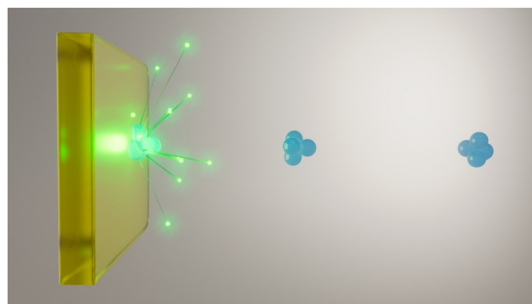
Luisa Leinauer, Giorgio Parla, Julian Messelbeger, Alberto Herrera,* Frank W. Heinemann, Jens Langer, Ilya Chuchelkin, Alexander Grasruck, Sibylle Frieß, Ahmed Chelouan, Konstantin Gavrilov and Romano Dorta*



14455

Time-resolved radioluminescence of the Cu(I) cluster $\text{Cu}_4\text{I}_6^{2-}$. Different responses to photo, X-ray, β -ray and α -particle excitation

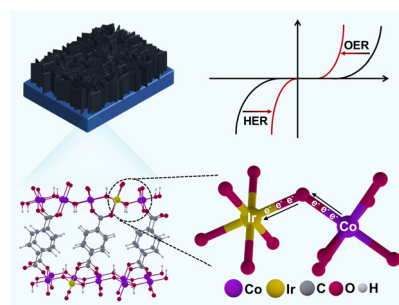
John V. Garcia, Camilo Guzman, Alexander A. Mikhailovsky, Sean Devitt, James R. Tinsley,* John A. DiBenedetto* and Peter C. Ford*



14459

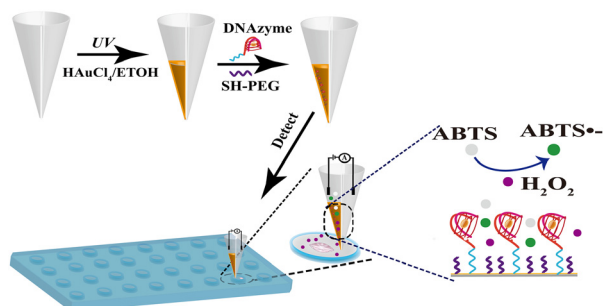
Regulating the electronic structure of metal–organic frameworks via ion-exchanged Ir dispersion for robust overall water splitting

Shunfa Zhou, Yuxuan Liu, Jiawei Shi, Jing Li and Weiwei Cai*



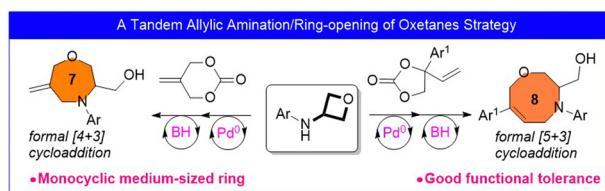
COMMUNICATIONS

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***In situ* monitoring of ROS secretion from single cells with a dual-nanopore biosensor**

Tao Zhao, Yi-Ping Chen, Ya-Li Xie, Yang Luo, Hao Tang* and Jian-Hui Jiang

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**Synthesis of medium-sized heterocycles from oxetanes based on an allylic amination/ring-opening strategy**

Jixing Li, Ming Fang, Maoyan Liao, Hongling Xie, Xiu-Qin Dong, Zhengyu Han,* Jianwei Sun and Hai Huang*

