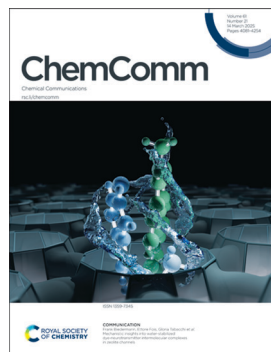


IN THIS ISSUE

ISSN 1359-7345 CODEN CHCOFS 61(21) 4081-4254 (2025)



Cover

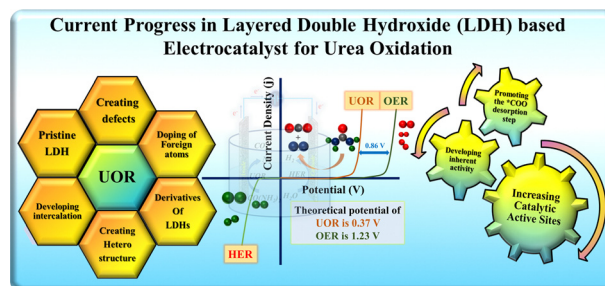
See Frank Biedermann, Ettore Fois, Gloria Tabacchi *et al.*, pp. 4160–4163. Image reproduced by permission of Ettore Fois from *Chem. Commun.*, 2025, **61**, 4160.

HIGHLIGHT

4092

Current progress in layered double hydroxide-based electrocatalysts for urea oxidation: insights into strategies and mechanisms

Asha K Satheesan, Ragunath Madhu, Sreenivasan Nagappan, Hariharan N Dhandapani, Aditi De, Suprobhat Singha Roy, Prasita Mazumder and Subrata Kundu*

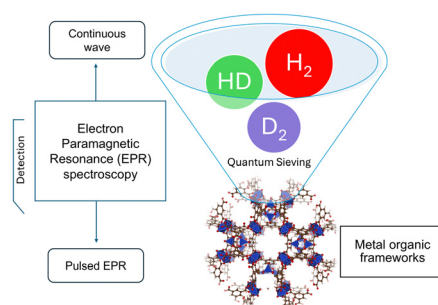


FEATURE ARTICLES

4110

Electron paramagnetic resonance spectroscopy: toward the path of dihydrogen isotopologue detection in porous materials

Muhammad Fernadi Lukman and Andreas Pöpl*



Advance your career in science

with professional recognition that showcases your **experience, expertise and dedication**

Stand out from the crowd

Prove your commitment to attaining excellence in your field

Gain the recognition you deserve

Achieve a professional qualification that inspires confidence and trust

Unlock your career potential

Apply for our professional registers (RSci, RSciTech) or chartered status (CChem, CSci, CEnv)

Apply now

rsc.li/professional-development

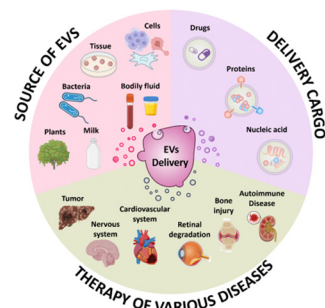


FEATURE ARTICLES

4123

Engineered extracellular vesicles: an emerging nanomedicine therapeutic platform

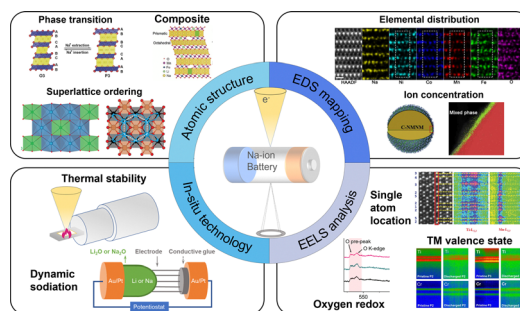
Jingshi Tang, Dezhong Li, Rui Wang, Shiwei Li, Yanlong Xing* and Fabiao Yu*



4147

Revealing the microstructure and mechanism of layered oxide cathodes for sodium-ion batteries by advanced TEM techniques

Sheng Xu, Lihua Zhao,* Shukui Li and Shaohua Guo*

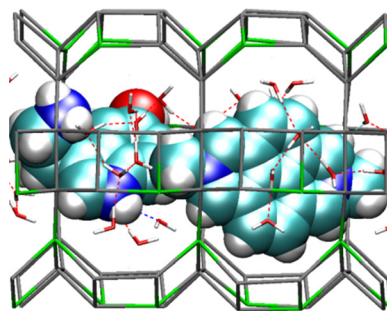


COMMUNICATIONS

4160

Mechanistic insights into water-stabilized dye-neurotransmitter intermolecular complexes in zeolite channels

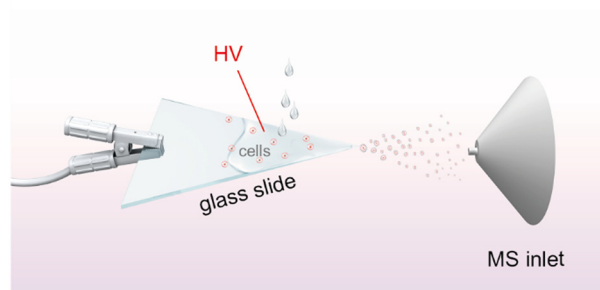
Cristiano Invernizzi, Laura M. Grimm, Frank Biedermann,* Ettore Fois* and Gloria Tabacchi*



4164

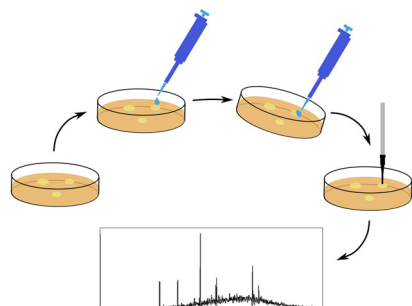
Glass electrospray for mass spectrometry *in situ* detection of living cells

Xiyang Ge, Xiner Xing, Xiaoni Wang, Yiyang Yin, Xiaotong Shen, Jin Ouyang and Na Na*



COMMUNICATIONS

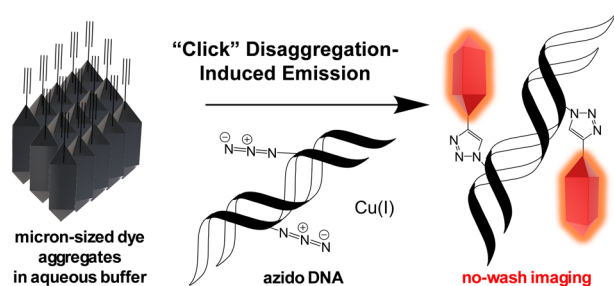
4168



Native ambient mass spectrometry of membrane proteins directly from bacterial colonies

Yuying Du and Helen J. Cooper*

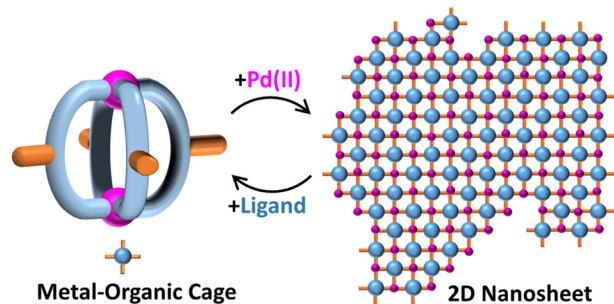
4172



"Click" disaggregation-induced emission of a fluorescent dye

Kaleena Basran and Nathan W. Luedtke*

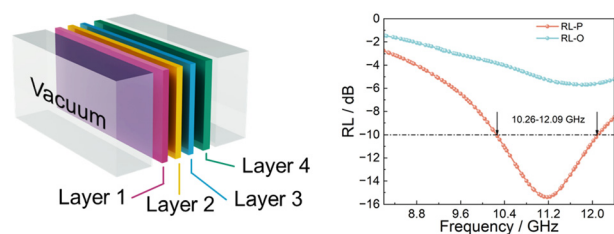
4176



Programmable assembly/disassembly of metal-organic cage integrated 2D nanosheets

Vellaiyadevan Sivalingam and Dillip Kumar Chand*

4180



Recyclable construction of multi-layer films with an impedance gradient design for high-efficiency electromagnetic absorption performance

Yu Chen, Bin Quan,* Litao Lin, Linyu Xie, Haoyu Jiao, Xinyi Min, Gaoyuan Yu, Binglin He, Xiaochi Lu, Jiajia Liu, Yan Chen and Xiaogu Huang*

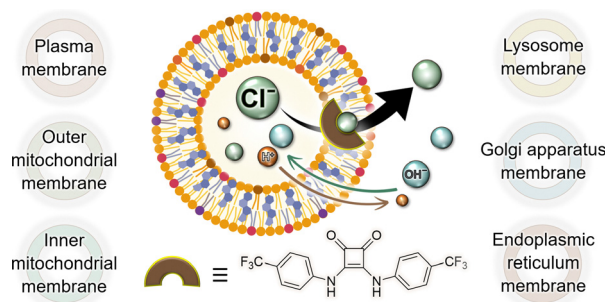


COMMUNICATIONS

4184

Anion transport in biologically relevant lipid mixtures

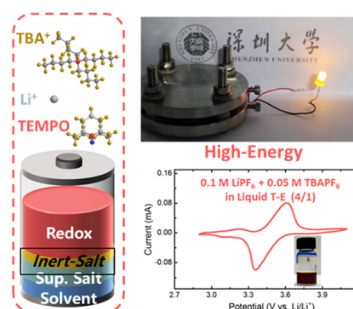
Krystyna Maslowska-Jarzyna, Sarah Rooijmans, Daniel A. McNaughton, William G. Ryder, Edward York, Moniek Tromp and Philip A. Gale*



4188

Introducing an inert-salt into a solvent-reduced catholyte for improving the electrochemical performance

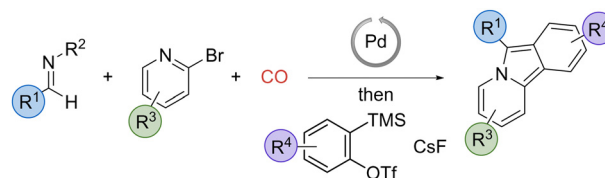
Mao Chen, Yangjun Xie and Hongning Chen*



4192

Design of a modular, palladium-catalyzed carbonylative synthesis of pyrido[2,1- α]isoindoles via benzyne 1,3-dipolar cycloaddition

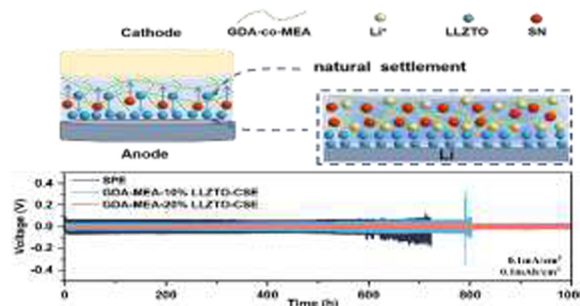
Karina S. Wong, Mohammad Ghanbari* and Bruce A. Arndtsen*



4196

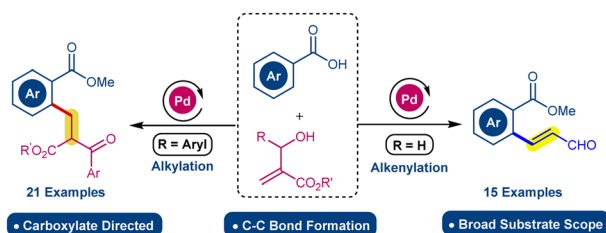
***In situ* construction of an asymmetric composite electrolyte with structural gradients for dendrite-free lithium metal batteries**

Tao You, Lehao Pan, Jingchao Liu, Yifan Zhao, Fengquan Liu, Chen Wang* and Lin Li*



COMMUNICATIONS

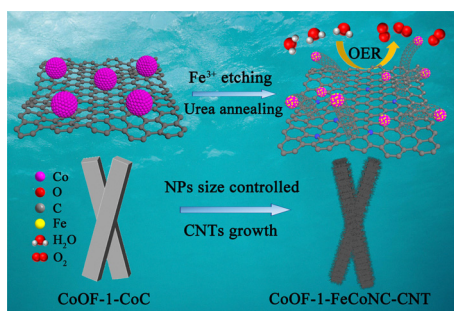
4200



Palladium-catalyzed substrate-switchable C–H alkenylation and alkylation of benzoic acids using MBH alcohols

Hemanga Bhattacharyya, Sharajit Saha, Kshitiz Verma and Tharmalingam Punniyamurthy*

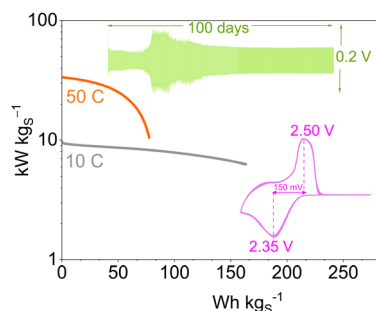
4204



Co-MOF-derived carbon nanomaterials with size-controlled FeCo alloys for oxygen evolution

Junliang Chen, Yunan Ye, Yi Wu, Jie Liu, Xuemei Zhou, Qipeng Li and Jinjie Qian*

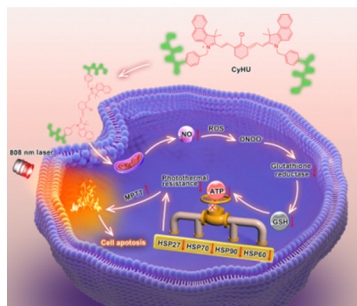
4208



A high-power lithium–sulfur battery combining a catholyte and a composite cathode

Edoardo Barcaro and Jusef Hassoun*

4212



A nitric oxide-boosting molecular agent to enhance mild-temperature photothermal therapy

Xinhao Zhang, Wei Pan,* Jialin Kuang, Kaiye Wang, Na Li* and Bo Tang*

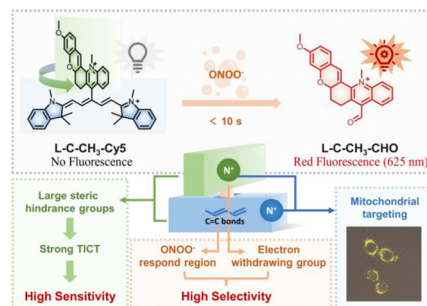


COMMUNICATIONS

4216

Fluorescence probe for the fast and sensitive detection and imaging of ONOO^- via regulation of charge distribution

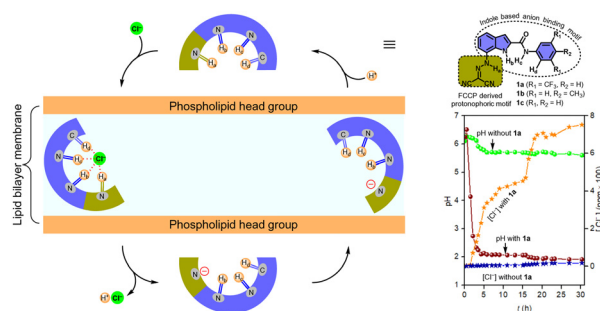
Yanhong Lin, Bingling Zhang, Xiaoli Yu, Chang Lu, Guozhen Zhang,* Xiaole Zhou* and Leyu Wang*



4220

Carbonohydrzonoyl dicyanide-linked indole carboxamides as a new scaffold for transmembrane H^+/Cl^- transport

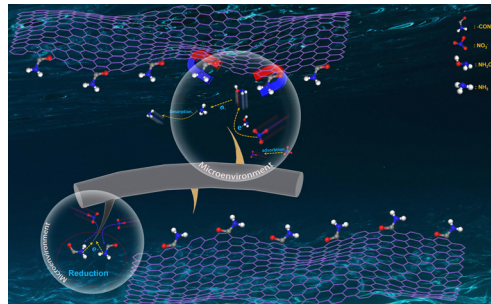
Akram Raza, Sandip Chattopadhyay, Debashis Mondal and Pinaki Talukdar*



4224

"Soft armor" regulates the electrocatalytic microenvironment for nitrate reduction to ammonia to greatly enhance stability

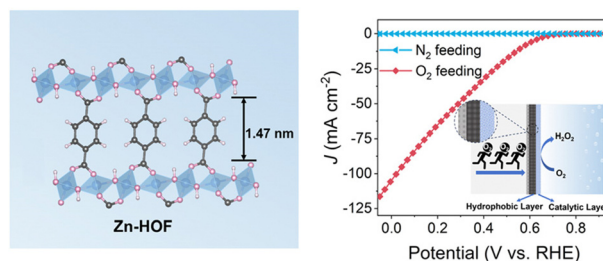
Xinxin Ji, Jiwen Hu, Hui Zhang,* Shikuo Li* and Fangzhi Huang*



4228

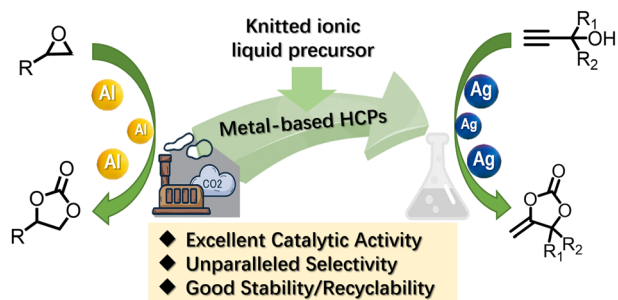
A zinc hydroxide-organic framework for electrochemical synthesis of H_2O_2

Jiajia Zou, Yang Yu, Dantong Zhao and Weihua Hu*



COMMUNICATIONS

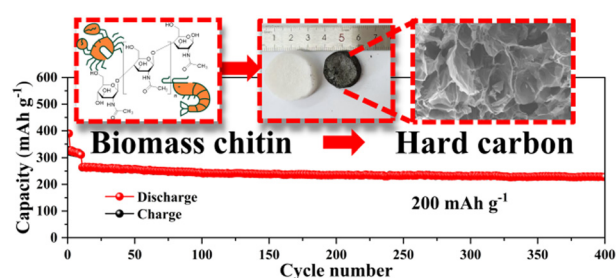
4232



Integrating metal complex units into knitted hypercrosslinked polymers for enhanced efficiency of cyclization reactions with CO₂

Yingyin Li, Ke Lin, Zhiyuan Chen, Yinghua Lu and Rongchang Luo*

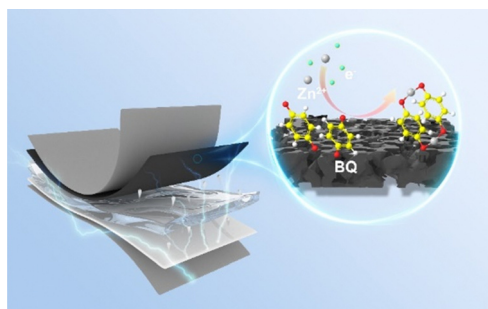
4236



Renewable chitin-derived hard carbon as a free-standing anode for sodium-ion batteries

Wenting Liu, Xiaoyu Wu,* Feng Wang and Zhenzhen Wu

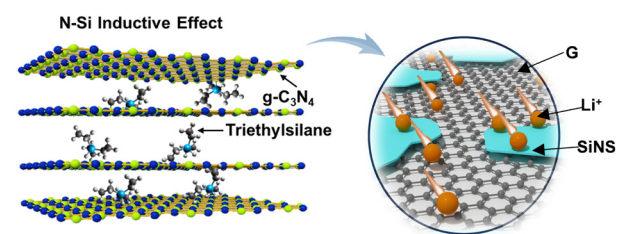
4240



Revitalizing inert carbon pores with benzoquinone for high-performance flexible zinc-ion capacitors

Lintong Hu, Xiaolong Li, Yunpeng Zhou, Can Cui, Minjie Shi and Chao Yan*

4244



Restriction of silicon aggregation upon enhanced bond cleavage

Shuyue Xue, Peng Li,* Yingchun Yan, Qinggang Zhang,* Zhen Wang, Zifei Sun and Jin Zhou*



4248

Metal-free carbon nitride catalyst for toluene oxidation

Yanping Li, Lizheng Chen, Tao Gan, Xuefeng Chu, Wanchun Zhu, Wenxiang Zhang, Wenfu Yan and Gang Liu*

