

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

IN THIS ISSUE

ISSN 1359-7345 CODEN CHCOFS 60(76) 10419–10598 (2024)



Cover

See Marcin Lindner, Artur Kasperek et al., pp. 10488–10491. Image reproduced by permission of Ettore Crovini from *Chem. Commun.*, 2024, **60**, 10488.



Inside cover

See Arnab Dutta et al., pp. 10492–10495. Image reproduced by permission of Arnab Dutta and Piyali Majumder from *Chem. Commun.*, 2024, **60**, 10492.

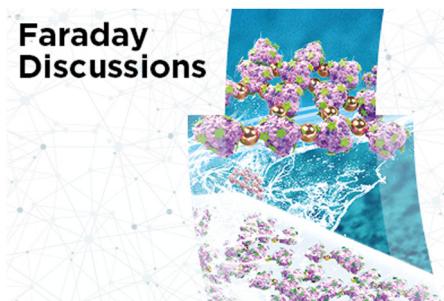
CONFERENCE REPORT

10431

Highlights from the Biocatalysis Faraday Discussion, May 2024, London, United Kingdom

Agata Raczyńska*

Faraday Discussions

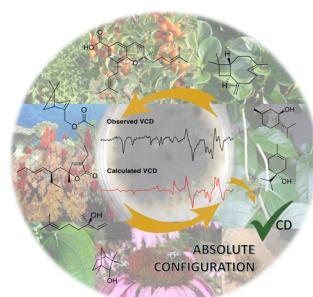


HIGHLIGHT

10439

Stereochemistry of natural products from vibrational circular dichroism

Andrea N. L. Batista, Alessandra L. Valverde, Laurence A. Nafie and João M. Batista Jr*



GOLD
OPEN
ACCESS

EES Batteries

Exceptional research on
batteries and energy storage

Part of the EES family

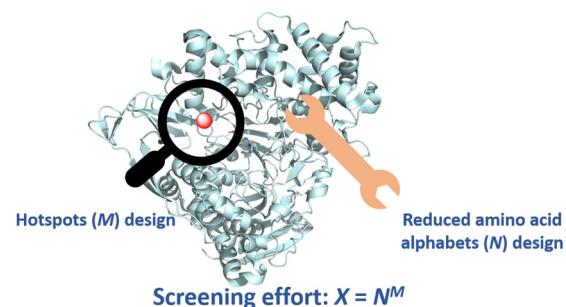
Join
in | Publish with us
rsc.li/EESBatteries

FEATURE ARTICLES

10451

Rational enzyme design by reducing the number of hotspots and library size

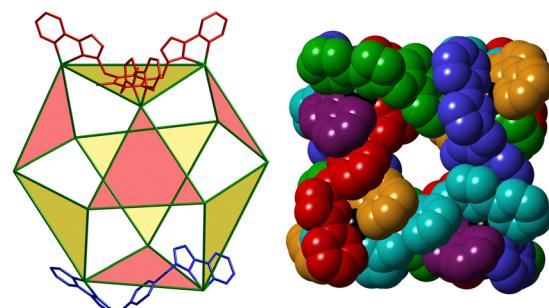
Zongmin Qin, Bo Yuan, Ge Qu* and Zhoutong Sun*



10464

New insights into coordination-cage based catalysis

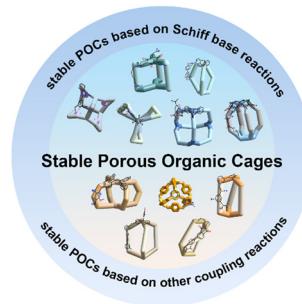
Michael D. Ward



10476

Construction of stable porous organic cages: from the perspective of chemical bonds

Miao Yang, Kongzhao Su* and Daqiang Yuan*

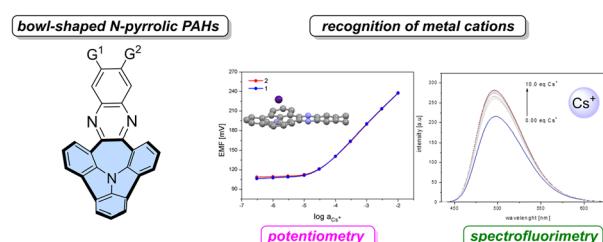


COMMUNICATIONS

10488

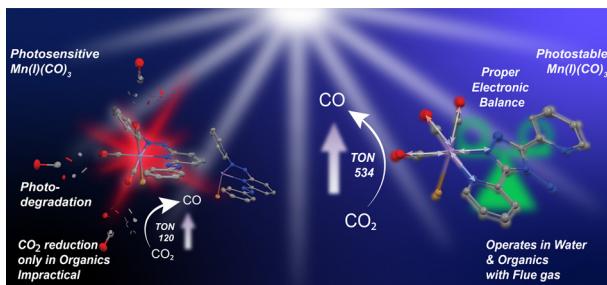
Metal cations recognition by bowl-shaped *N*-pyrrolic polycyclic aromatic hydrocarbons

Daria Szeląg, Jakub S. Cyniak, Joachim Ażgin, Jakub Wagner, Marcin Lindner,* Wojciech Wróblewski and Artur Kasprzak*



COMMUNICATIONS

10492



A ligand-modulated photostable Mn(i)-carbonyl complex for preferential conversion of CO_2 to CO in water

Chandan Das, Suchismita Ghosh, Rathindranath Biswas, Goutam K. Lahiri and Arnab Dutta*

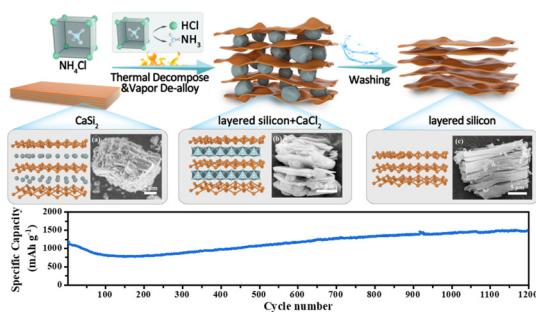
10496



Ruthenium-infused nickel sulphide propelling hydrogen generation via synergistic water dissociation and Volmer step promotion

Nasrin Banu G., Rama Prakash M., Anantharaj Sengeni and Bernaurdshaw Neppolian*

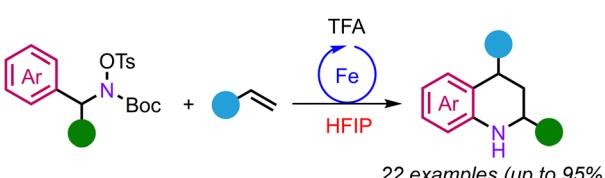
10500



Low-temperature de-alloying and unique self-filling interface optimization mechanism of layered silicon for enhanced lithium storage

Wanling Ji, Minghuang Li, Yutong Nong, Jie Luo, Xinglong Liang, Xiaowei Wang,* Lei Ming, Xing Ou, Jiafeng Zhang,* Bao Zhang, Xuwang Fu, Lei Dong, Jianmin Feng* and Ji Liang*

10504



A povarov-type reaction to access tetrahydroquinolines from N-benzylhydroxylamines and alkenes in HFIP

Valentyn Pozhydaiev, Daniella Al-Othman, Joseph Moran* and David Lebœuf*



COMMUNICATIONS

10508

(NHC)Ni(II)-catalyzed regioselective hydroalkenylation of norbornene derivatives: fine-tuning of NHC ligands and donor alkenes

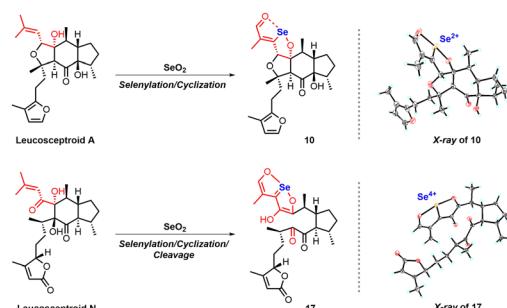
Meng Yu, Xiao Gu and Chun-Yu Ho*



10512

Selenium dioxide promoted selenylation/cyclization of leucosceptane sesterterpenoids

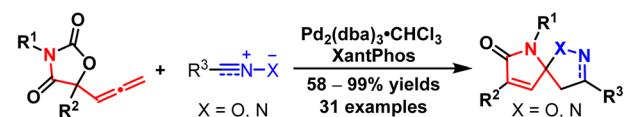
Hao Geng, Ran Fu, Ting-Ting Zhou, Man Li, Yan-Chun Liu, Xiao-Nian Li, Yan Liu, Yu Zheng* and Sheng-Hong Li*



10516

Pd-catalyzed sequential intramolecular annulation/intermolecular [3+2] cycloaddition of 5-allenylloxazolidine-2,4-diones with dipoles: synthesis of spiroheterocycles

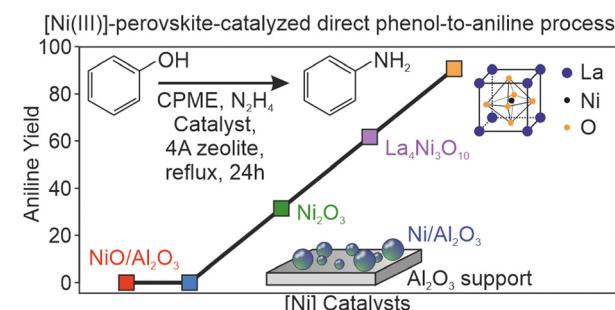
Yujie Dong, Jun Liu, Rongjin Ning, Fazhou Yang, Cheng Zhang* and Hongchao Guo*



10520

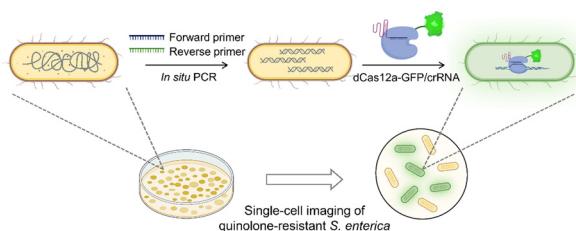
Nickel-based perovskite-catalysed direct phenol-to-aniline liquid-phase transformations

Anna Adél Ádám, Sándor Balázs Nagy, Ákos Kukovecz, Zoltán Kónya, Pál Sipos and Gábor Varga*



COMMUNICATIONS

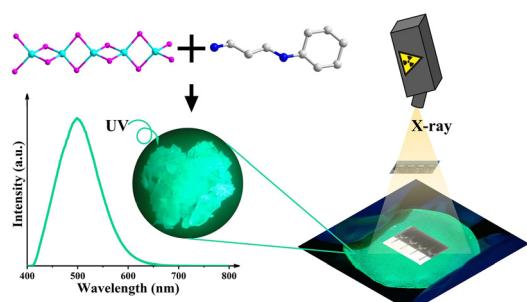
10524



High-contrast imaging of cellular non-repetitive drug-resistant genes *via in situ* dead Cas12a-labeled PCR

Ruijie Deng, Xinlei Zhang, Jijuan Cao, Xinmiao Liu, Yong Zhang, Feng Wang* and Xuhuan Xia*

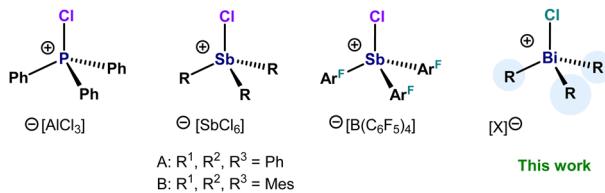
10528



One-dimensional hybrid copper halides with high-efficiency photoluminescence as scintillator

Zhongliang Gong, Jie Zhang, Ying-Yue Liu, Lu-Xin Zhang, Qing Zhang, Lingyun Xiao, Bingqiang Cao,* Bing Hu* and Xiao-Wu Lei*

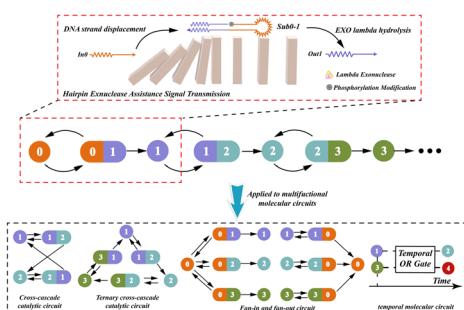
10532



Synthesis and characterization of chlorotriarylbismuthonium salts

Jennifer Kuziola, Nils Nöthling, Markus Leutzsch and Josep Cornella*

10536



DNA domino circuits based on a hairpin exonuclease assistance signal transmission architecture for temporal logic operations

Xun Zhang, Yao Yao, Xin Liu, Xiaokang Zhang, Shuang Cui, Bin Wang and Qiang Zhang*

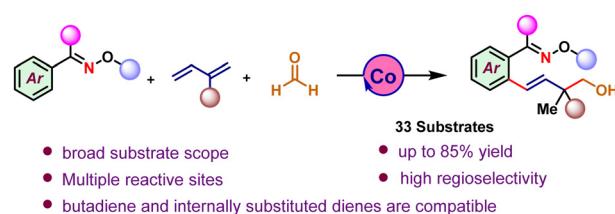


COMMUNICATIONS

10540

Cobalt-catalyzed three-component assembly of aromatic oximes with substituted dienes and formaldehyde

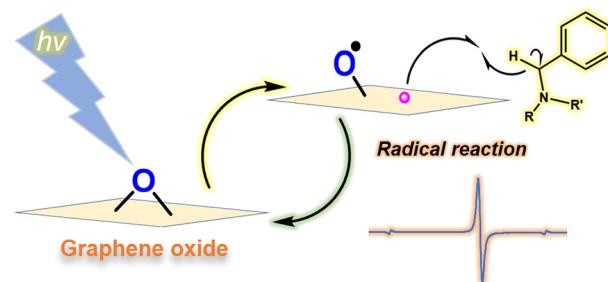
Priyambada Prusty and Masilamani Jeganmohan*



10544

Investigating the radical properties of oxidized carbon materials under photo-irradiation: behavior of carbon radicals and their application in catalytic reactions

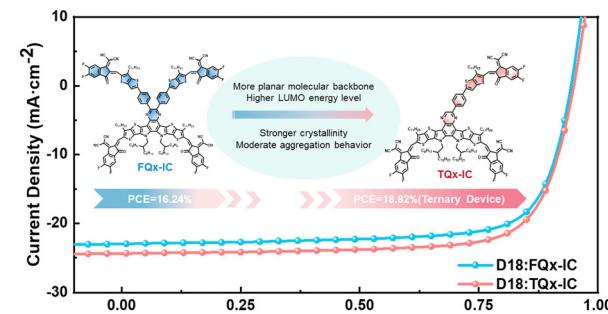
Md Razu Ahmed, Israel Ortiz Anaya and Yuta Nishina*



10548

Multi-arm quinoxaline-based acceptors formed by π -conjugation extension for efficient organic solar cells

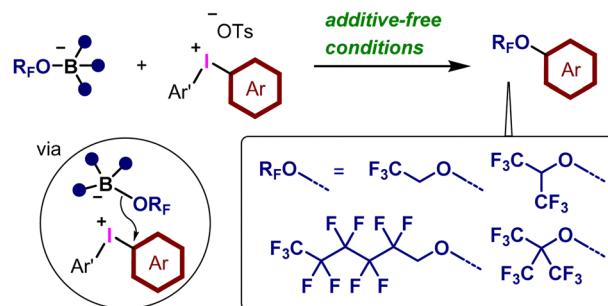
Xinya Ran, Dingding Qiu, Yanan Shi, Hao Zhang, Jianqi Zhang, Zhixiang Wei* and Kun Lu*



10552

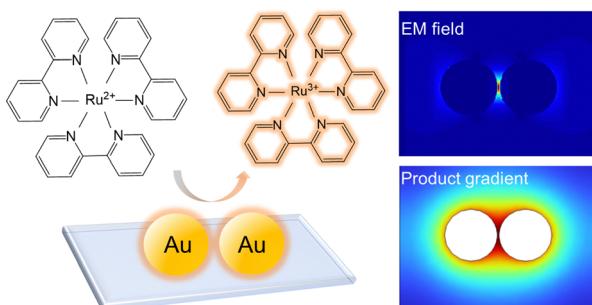
Borate-mediated aryl polyfluoroalkoxylation under transition-metal-free conditions

Kotaro Kikushima,* Tomoka Tsuda, Naoki Miyamoto, Yasuyuki Kita* and Toshifumi Dohi*



COMMUNICATIONS

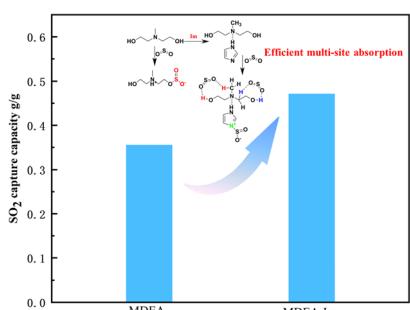
10556



Nanostructure impact on electrocatalysis in gold nanodimers via electrochemiluminescence microscopy

Qian-Qian Tao, Cong-Hui Xu, Wei Zhao,*
Hong-Yuan Chen and Jing-Juan Xu*

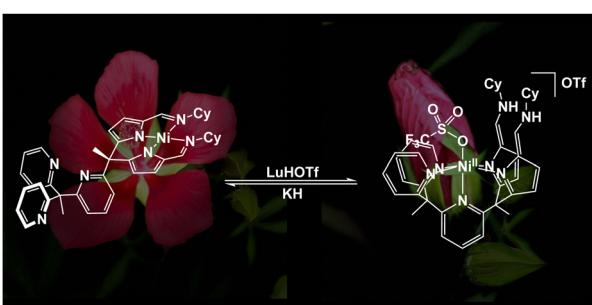
10560



Tuning the structure of *N*-methyldiethanolamine-based deep eutectic solvents for efficient and reversible SO₂ capture

Xueqi Li, Lingqiang Meng, Fuli Yang, Zhuhong Yang,*
Jun Li, Yifeng Chen* and Xiaoyan Ji

10564



Synthesis and characterization of tetrapodal nickel complexes with adaptable ligand binding geometries

Hsien-Liang Cho, Kelly L. Gullett and Alison R. Fout*

10568



Waste biomass-based 3D graphene aerogels for high performance zinc-ion hybrid supercapacitors

Gouri Sankar Das, Lokesh Kumar Jangir, K Sandeep Raju,
Yogesh Chandra Sharma* and Kumud Malika Tripathi*

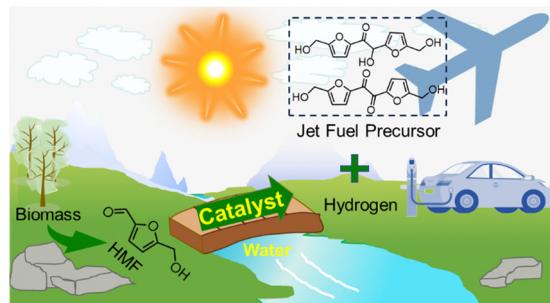


COMMUNICATIONS

10572

Photocatalytic production of a C₁₂ liquid biofuel precursor and H₂ by Ni(OH)₂–ZnIn₂S₄ in anaerobic water

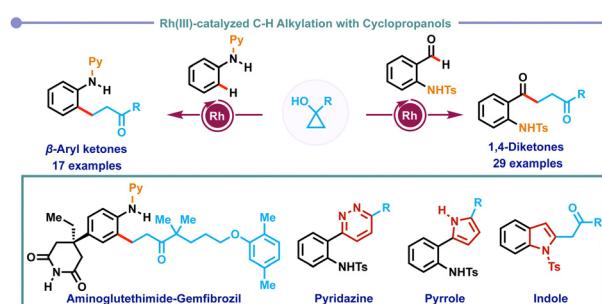
Wanqiong Kang, Xiaolong Li, Xiongxiong Zeng, Han Wu, You Ge, Lan Yuan,* Yi Liu* and Chuang Han*



10576

Rh(III)-catalyzed aldehydic and aryl C–H alkylation with cyclopropanols via C–H/C–C bond activation

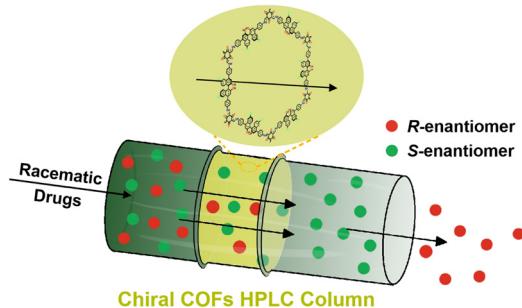
Om Prakash Dash, Divya Garg and Chandra M. R. Volla*



10580

Binaphthyl-based chiral covalent organic frameworks for chiral drug separation

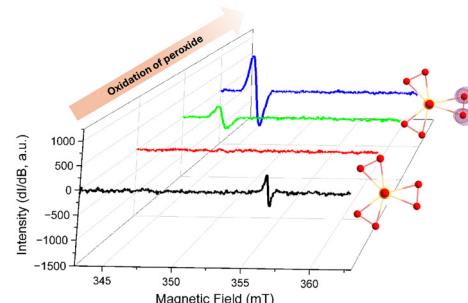
Hui-Chao Ma,* Hai-Ping Jiang, Zi-Hui Yao, Jun-Feng Tan, Yang-Yang Xing, Gong-Jun Chen* and Yu-Bin Dong*



10584

Impacts of trace level chromium on formation of superoxide within uranyl triperoxide complexes

Sarah K. Scherrer, Harindu Rajapaksha, Dmytro V. Kravchuk, Sara E. Mason and Tori Z. Forbes*



COMMUNICATIONS

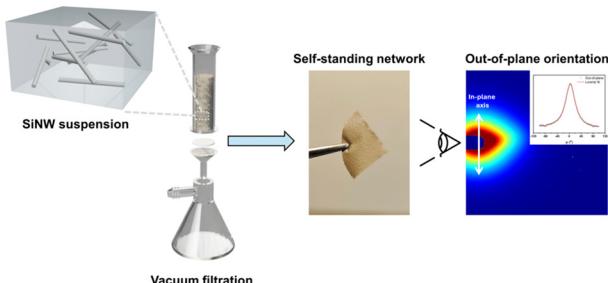
10588



Construction of heterocycle-triazolotriazine framework energetic compounds: towards novel high-performance explosives

Pengju Yang, Xiaoxiao Zheng, Guojie Zhang, Caijing Lei, Guangbin Cheng* and Hongwei Yang*

10592



Silicon nanowire aqueous dispersions for processing into macroscopic network materials

David Tilve-Martinez,* Nabil Abomailek, Felipe Lozano-Steinmetz, Afshin Pendashteh and Juan J. Vilatela*

CORRECTION

10596

Correction: Recent applications of organic cages in sensing and separation processes in solution

Sonia La Cognata and Valeria Amendola*

