

Green Chemistry

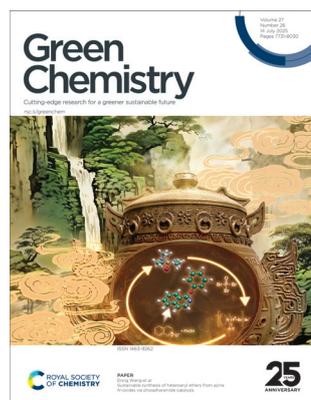
Cutting-edge research for a greener sustainable future

rsc.li/greenchem

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Cover
See Dong Wang *et al.*,
pp. 7788–7794.

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Inside cover
See Michael Peter Huber
et al., pp. 7795–7802.

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Green Chem., 2025, **27**, 7795.

EDITORIAL

7742

RESILIENCE by design: ten principles to guide chemistry in a volatile world

Carina S. P. Vieira, Daniela Malafaia, Diana R. Cunha, Joana F. Leal, João P. M. António, Pedro M. P. Gois, Javier Garcia-Martinez, Timothy Noël and Martyn Poliakoff

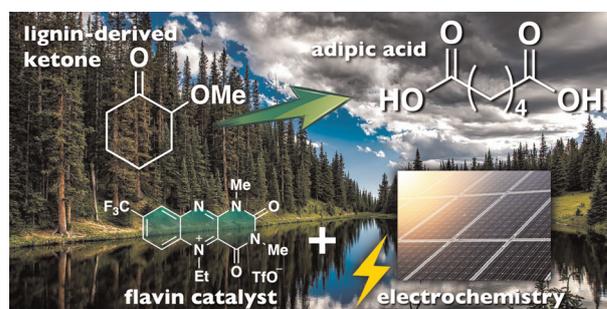
-  **R**ange of suitable renewable feedstocks
-  **E**valuate all potential disruptions
-  **S**afe operation in all circumstances
-  **I**nterruptible processes
-  **L**ocalised production on distributed sites
-  **I**nherently safe processes
-  **E**ducate a resilient transdisciplinary chemical workforce
-  **N**et-Zero but with multiple potential sources of energy
-  **C**ontinuous flow reactors for efficiency and safety
-  **E**ngineer for both resilience and sustainability

COMMUNICATIONS

7748

Flavin-catalyzed electrochemical production of adipic acid from lignin-derived-methoxycyclohexanone with air and water

Maki Murao, Taiga Mizushima, Hazuki Miyake, Daiki Atarashi and Hiroki Iida*



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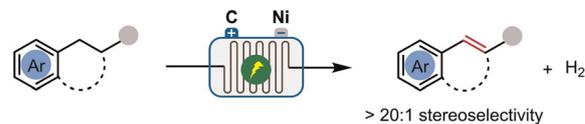
Fundamental questions
Elemental answers

COMMUNICATIONS

7755

Continuous-flow electrochemical benzylic dehydrogenation of arylalkanes to arylalkenes

Xuan-Xuan Du, Shu-Fan He, Daixi Li,* Yong Jiang, Chen Zhu and Tao Shen*

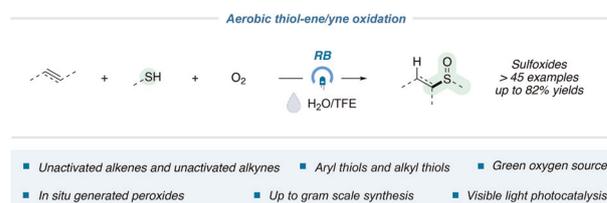
Direct Continuous Flow Electrochemical Dehydrogenation of Arylalkanes

- ✓ one step
- ✓ oxidants and H acceptor-free
- ✓ high stereoselectivity
- ✓ high site-selectivity
- ✓ catalyst-free
- ✓ practical, large scale

7763

Anti-Markovnikov hydrosulfenylation of unactivated alkenes/alkynes via visible-light organic photocatalysis

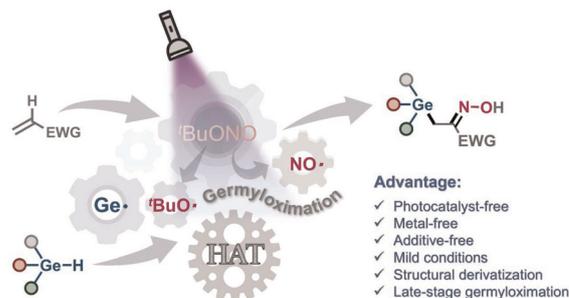
Jiayi Gu, Meixiu Xin, Zhuo Cheng, Zhiru Zou, Zhibo Du, Xinyi Cheng, Yan Wang and Yong Zou*



7771

Photoinduced radical gemyloximation of activated alkenes

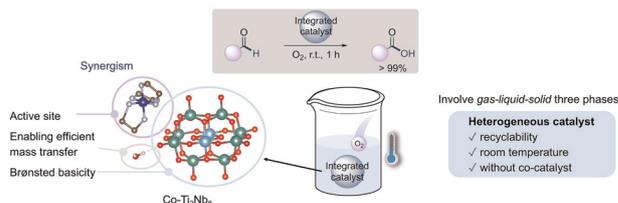
Wenshan Wang, Gonghong Qiu, Wenjing Ma, Guiyun Chen, Lingbo Qu, Tianyi Shang,* Yan Liu* and Bing Yu*



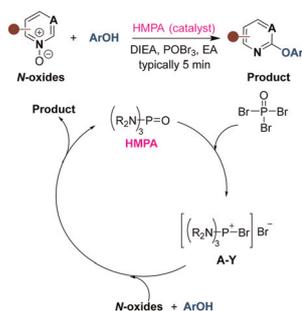
7781

Development of an integrated polyoxoniobate catalyst with oxygen activation and basicity as a green catalyst for efficient aerobic oxidation of aldehydes at room temperature

Yan-Ru Li, Chun-Xia Chen, Ke-Xin Qi, Cai Sun* and Shou-Tian Zheng*



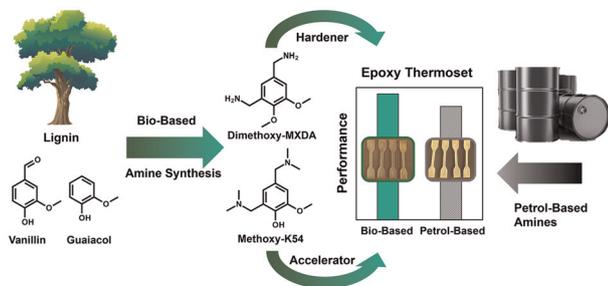
7788



Sustainable synthesis of heteroaryl ethers from azine *N*-oxides via phosphoramidate catalysis

Danyi Liu, Fenlian Xu, Tong Han, Keyume Ablajan and Dong Wang*

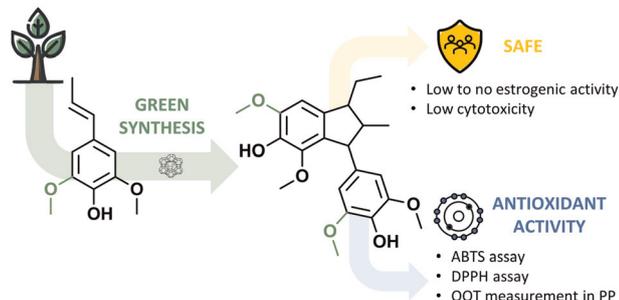
7795



Synthesis of novel bio-based amines from vanillin and guaiacol for high performance epoxy thermosets

Florian Häfliger, Quentin Bievelot and Michael Peter Huber*

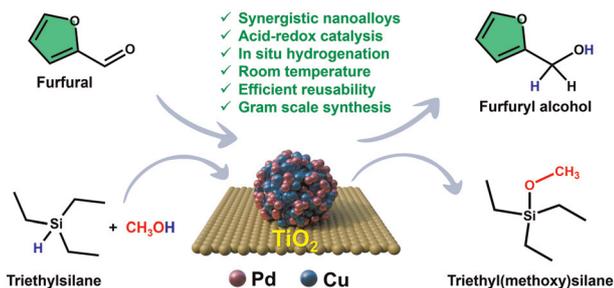
7803



Novel arylindane diols as sustainable primary antioxidants from lignin

Tessy Hendrickx, Laura Trulleman,* Alexander J. Heyer, Imke Boonen, Marko Turkalj, Fatima Rammal, Yiqi Su, Besarta Matranxhi, Durgasruthi Pully, Bart Van Meerbeek, Peter Van Puyvelde, Marc Elskens, Kirsten L. Van Landuyt and Bert F. Sels*

7820



Synergistic nanoalloy PdCu/TiO₂ catalyst for *in situ* hydrogenation of biomass-derived furfural at room temperature

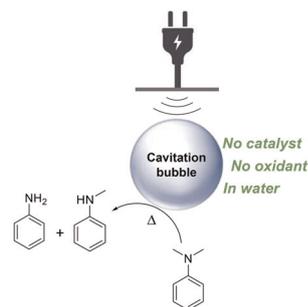
Chand Adarsh Ashwani, Palanivel Subha, Lavanya Yalagandula, Christophe Len, Satyapaul A. Singh and Putla Sudarsanam*



7833

Catalyst-free *N*-dealkylation of aniline derivatives in water induced by high frequency ultrasound

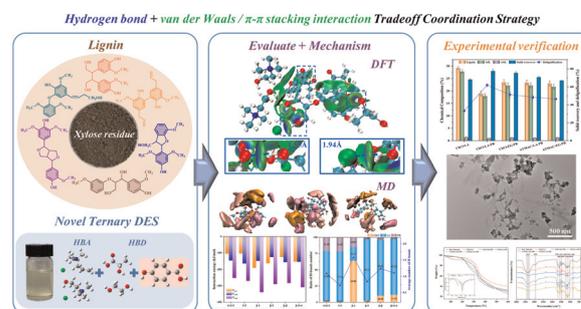
Kafui Y. E. Late, Damien Denis, Quentin Blancart Remaury, Patrycja Roszkowska, Anna G. Slater, Prince N. Amaniampong, Tony Chave and François Jérôme*



7843

Multiscale exploration of the lignin dissolution mechanism based on novel ternary deep eutectic solvents incorporating *p*-hydroxybenzoic acid

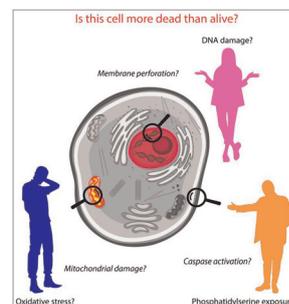
Hanwen Ge, Jiahui Wei, Shenglin Wang, Zexu Yan, Mingzhe Jiang, Lingxiao Zhu, Chao Liu, Bin Li, Caoxing Huang and Huanfei Xu*



7863

What do we learn when we study cytotoxicity? Critical shortcomings in the green chemistry context using imidazolium ionic liquids as an example case

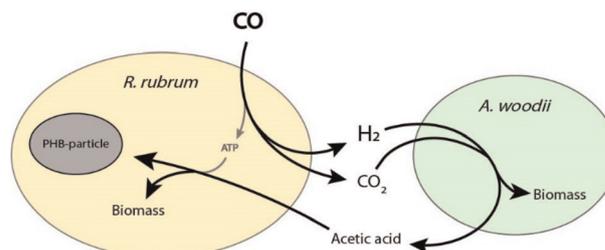
Ksenia S. Egorova,* Andrey E. Kolesnikov, Alexey D. Tikhomirov, Alexander A. Filippov and Valentine P. Ananikov*



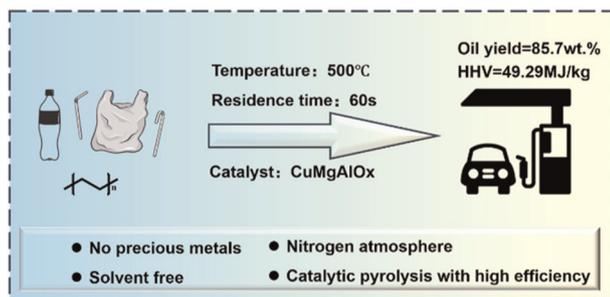
7878

Microbial synergy between *Rhodospirillum rubrum* and *Acetobacterium woodii* enables anaerobic CO conversion to polyhydroxyalkanoates

Timon M. Torres Ruano, Martijn Diender and Diana Z. Sousa*



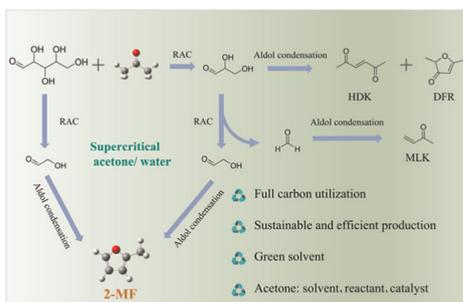
7887



Bridging plastic recycling and clean energy production: hydrogen-free catalytic pyrolysis of polyethylene over CuMgAlO_x for high-yield diesel fuel generation

Xiangyu Xie, Mengfei Wang, Ning Mao, Heping Yang, Xiaowei Bai, Zhenghua Dai and Jian Li*

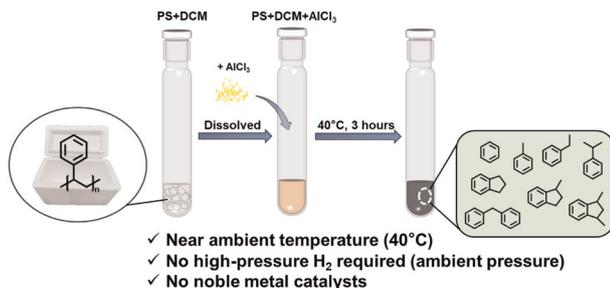
7897



Conversion of biomass-derived monosaccharides to 2-methylfuran in supercritical acetone

Qiufu Zeng, Chenyu Ge, Qianxin Sun, Xi Li and Changwei Hu*

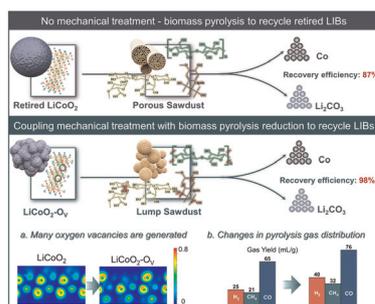
7908



Transforming polystyrene wastes into aromatic products near ambient temperature with aluminium chloride

Shuying Tian, Jing Dai, Zhengjian Li, Qiqi Wu and Guangxu Chen*

7918



Mechanical force inducing oxygen vacancies and pyrolysis gas reduction activity for the efficient valorization of waste biomass and Li-ion batteries

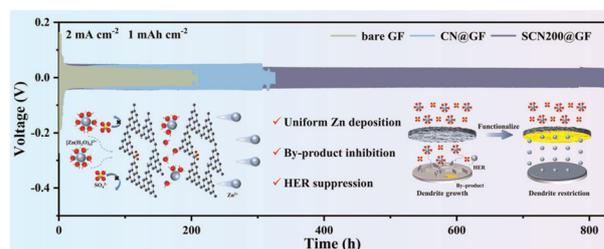
Fengyin Zhou, Beilei Zhang, Hongya Wang, Danfeng Wang, Xin Qu, Shiyu Wang, Mengyi Tang, Ling Peng, Xiang Chen, Dihua Wang, Lawrence Yoon Suk Lee and Huayi Yin*



7928

Ion-sieving separators modified by sulfonate-functionalized carbon nitride towards highly stable zinc metal anodes

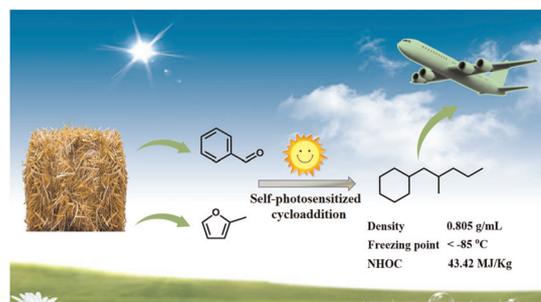
Wenjie Si, Miao Yu,* Jiawei Mu, Xiaoyu Liu, Jiale Li, Jiali Wang, Tiantian Li, Xiangcun Li, Wenji Zheng, Yan Dai, Xiaobin Jiang and Gaohong He*



7940

Self-photosensitized cycloaddition induced synthesis of a high-density fuel with ultra-low freezing point using bulk bio-benzaldehyde and furans

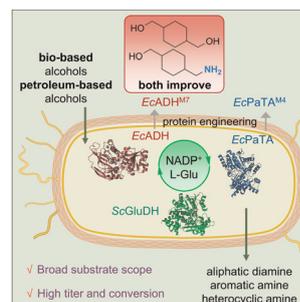
Bo Yang, Jiawei Xie, Yuxuan Liang, Xiumei Ma, Huyao Ge, Xueping Wang, Zhaohui Wang, Qiuyu Zhang,* Ji-Jun Zou and Junjian Xie*



7950

A platform for efficiently producing aliphatic, aromatic, and heterocyclic primary diamines from alcohols

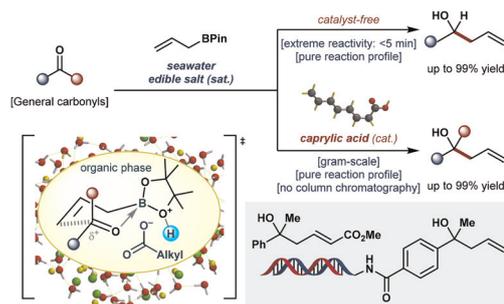
Zhizhen He, Yeting Han, Wei Song, Cong Gao, Xinmiao Liu, Wanqing Wei* and Jing Wu*



7960

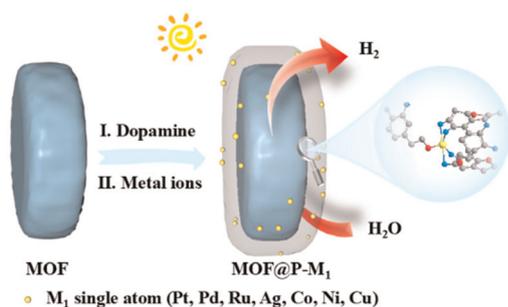
"On-seawater" accelerated aquacatalysis by edible fatty acids: harnessing the remarkable salting-out effect

Soo Bok Kim, Seok Ju Hong, Dong Hyeon Kim, Gang Min Lee, Yujin Lim, Sangkyu Lee, Yongseok Kwon and Han Yong Bae*



PAPERS

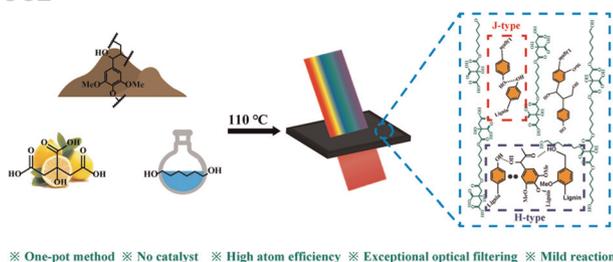
7973



A universal strategy for single-atom synthesis using conductive polymer-modified metal–organic frameworks for enhanced photocatalysis

Yuting Zhu, Na Song, Shengjun Liu,* Kui Zhang,* Bo Liu and Yang Wang*

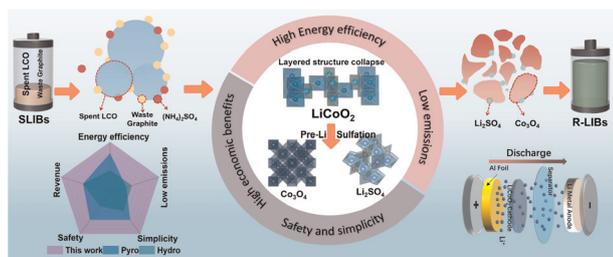
7982



Sustainable and lignin-assisted polyesters with exceptional optical filtering via a highly atom-efficient *in situ* polymerization strategy

Shi Liu, Conghui Mi, Yuxuan Qiu, Zhihan Tong, Jiajun Liu, Jinsong Sun, Xiaoxue Song,* Qinqin Xia* and Haipeng Yu*

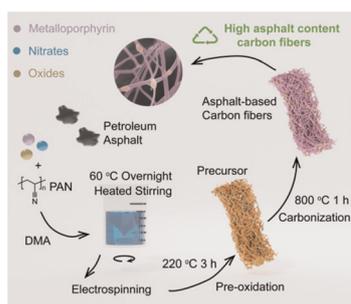
7991



A green strategy for selective recovery of valuable metals from spent lithium-ion batteries through a waste graphite-assisted sulfation process

Minyu He, Fagen Zhou, Sohrab Rohani, Charles Q. Jia, Dong Wang,* Wenhao Yu, Liumei Teng, Fei Meng, Qingcai Liu and Weizao Liu*

8007



Transforming petroleum asphalt into carbon fibers and related metal/oxide composites by electrospinning synthesis

Ying Gao, Yang Li, Qiang Niu and Pengfei Zhang*



8018

Base-free aerobic oxidation on Pt/OMS-2 for the synthesis of tetrahydrofuran-2,5-dicarboxylic acid: a bio-based flexible diacid

Enhui Du, Mingxin Lv, Hongli He, Zhilin Chen, Jie Yang, Liyuan Huai, Yuxiang Chen and Jian Zhang*

