

Green Chemistry

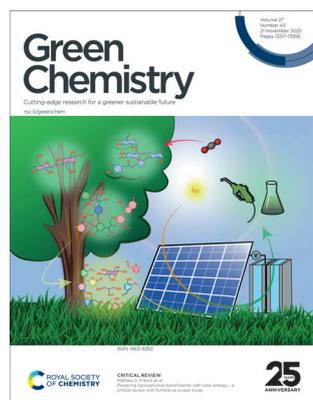
Cutting-edge research for a greener sustainable future

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IN THIS ISSUE

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Cover
See Mathieu S. Prévot *et al.*,
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Inside cover
See Qi Niu, Xin Du,
Pengyu Xing, Stef Ghysels,
Kai Li, Jihong Li, Qiang Lu,
Wolter Prins and
Frederik Ronsse
pp. 13667–13681.

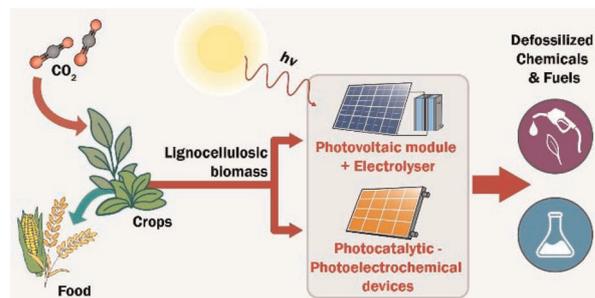
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2025, **27**, 13667.

CRITICAL REVIEW

13529

Powering lignocellulose biorefineries with solar energy – a critical review with furfural as a case study

Clément Spadetto, Cyril Hachemi and
Mathieu S. Prévot*

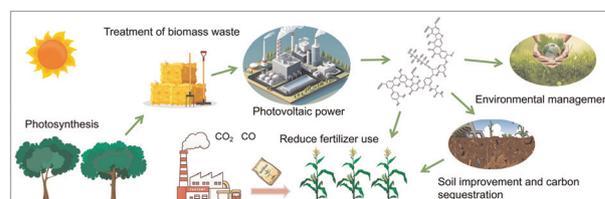


TUTORIAL REVIEWS

13558

A comprehensive review on hydrothermal humic acids: synthesis, characterization, applications, and perspectives

Hu Xu, Yangyang Li, Yexuan He, Xin Sheng, Zhiwei Zhao
and Li Li*



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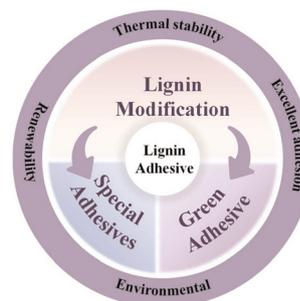
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TUTORIAL REVIEWS

13577

Technology of lignin modification: progress in specialty and green adhesives' mechanical properties

Haijing Ma, Ziyang Zhang, Yuli Wang, Jiangbo Wang, Heyu Chen,* Shaohua Jiang* and Xiaoshuai Han*

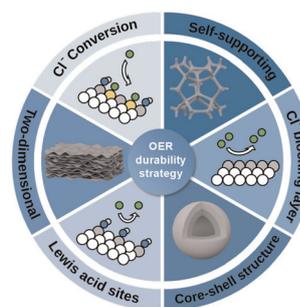


PERSPECTIVES

13607

Oxygen evolution reaction electrocatalysts for green hydrogen production in seawater: enhancement mechanism in catalytic activity and durability

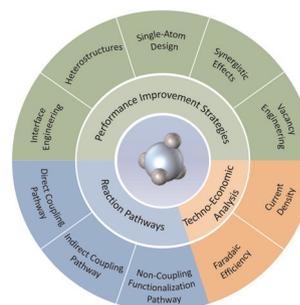
Bingxu Wang, Xiao Tang, Fahao Sun, Sailong Wang, Xiaobin Liu, Jianping Lai, Jingqi Chi* and Lei Wang*



13632

Research progress in C₂₊ products in electrocatalytic methane valorization

Zijing Suo, Yuyao Sun, Jianping Lai* and Lei Wang*

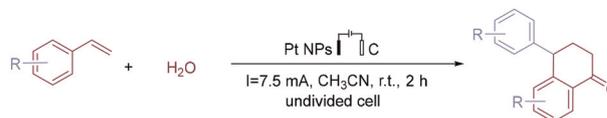


COMMUNICATIONS

13644

Electrochemical synthesis of tetralones utilizing platinum nanoparticles as the anode material

Hui Luo, Yan Wang, Yu He, Li Li, Yinfeng Ma, Guohui Wang and Jinhui Yang*



- Low metal utilization with high catalytic efficiency
- Mild conditions, no need for metal catalysts or oxidants.
- Clear mechanism research, water as a safe and green oxygen source

28 examples
up to 83% yield

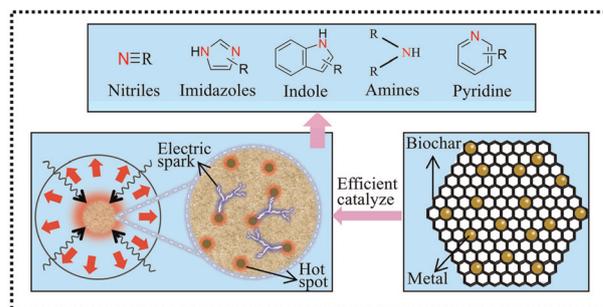


PAPERS

13692

Synergistic microwave–metal interactions in polyurethane/biomass co-pyrolysis: unraveling reaction mechanisms and product selectivity control

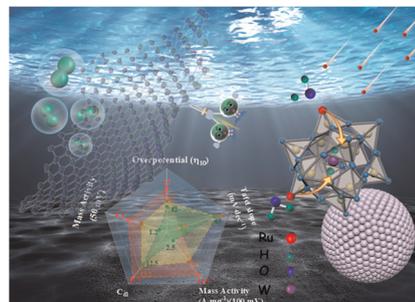
Yu Ni, Shanjian Liu,* Weiming Yi, Jiyan Ma, Qing Dong and Chengxizi Zhang



13711

Intensifying hydrogen spillover over silicotungstic acid decorated carbon black-supported Ru by green plasma preparation for boosting the electrocatalytic hydrogen evolution reaction

Yunzhe Ma, Hong Li, Fei Gao, Yue Hua, Xiuling Zhang, Jingsen Zhang* and Lanbo Di*

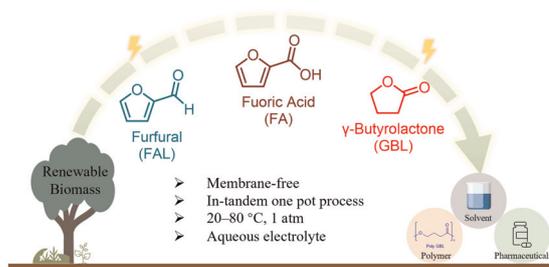


13721

Membrane-free one-pot cascaded electrocatalytic redox of furfural into gamma-butyrolactone

Shengqin Liu, Yangxin Jin, Qi Zhu, Xiaodan Xu, Shan Shao, Kartick Chandra Majhi, Qingguo Le, Jieming Huang, Jian Zhang, Zupeng Chen and Jason Chun-Ho Lam*

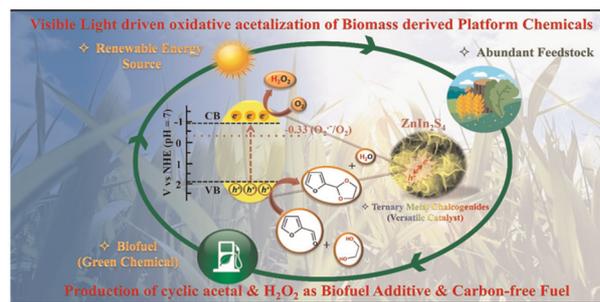
Biomass-Derived FAL to GBL: Membrane-Free Electrochemically Sustainable Process



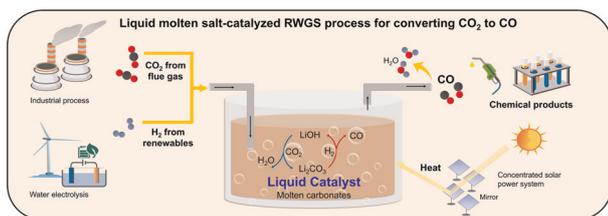
13731

Upgrading biomass-derived platform chemicals into biofuel additives in synergism with H₂O₂ via a ZnIn₂S₄ photocatalyst: towards solar fuels

Arpna Jaryal, Shivali Dhingra, Nisha Mehta, Md. Ehesan Ali and Kamalakannan Kailasam*



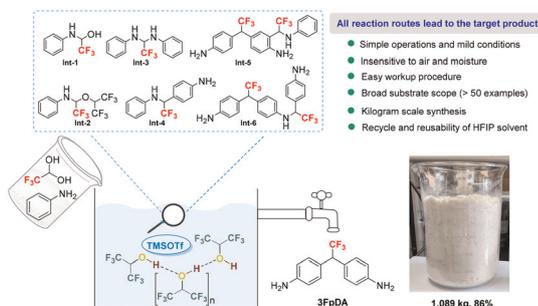
13740



A liquid molten salt catalyst with dynamic active sites for efficient conversion of CO₂ to CO

Rui Yu,* Baoxin Gao, Xi Xiong, Kaifa Du and Kaiming Wu*

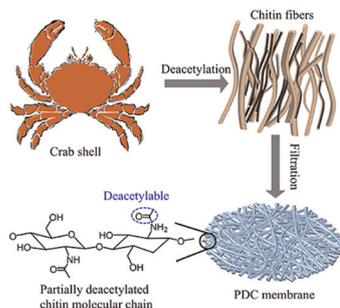
13751



Different paths lead to the same destination: a highly efficient TMSOTf/HFIP catalytic system for large-scale synthesis of fluoroalkyl-containing 4,4'-methylenedianiline (MDA) monomers

Ziyan Wu, Guodong Fang, Xindi Li, Yuhao Wu, Jinshan Li,* Yan Feng, Jialin Xie, Xueqing Zhou, Zhenchang Wen and Chunman Jia*

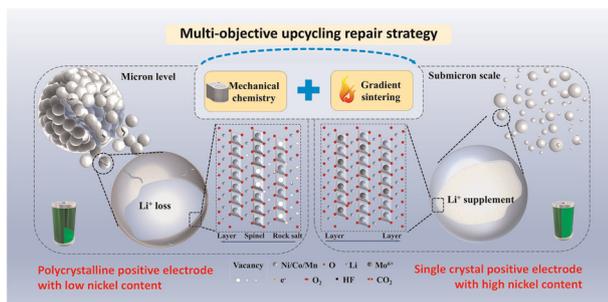
13762



Crab shell-derived chitin nanofiber separator for high-rate potassium-ion batteries

Taohong Wang,* Haoxian Shi, Junyi Wen, Donghao Yang, Boyang Zhou, Hao Xi and Zhen Zhang*

13773



Upcycling spent polycrystal LiNi_{1/3}Co_{1/3}Mn_{1/3}O₂ cathodes into single-crystal Ni-rich materials via the "four-in-one" upcycling regeneration strategy

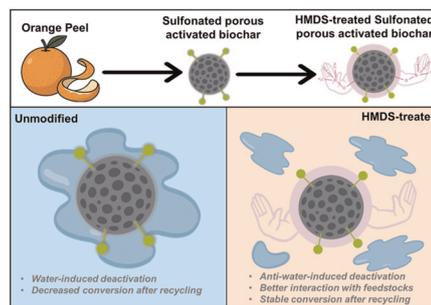
Fu Wan,* Da Yang,* Ruiqi Liu, Yupeng Lin, Wenwei Yin, Kaida Hu, Changding Wang, Yujie Zheng* and Weigen Chen



13789

Design and synthesis of biobased superhydrophobic biochar catalyst derived from *Citrus sinensis* for biodiesel production using inedible oil feedstocks

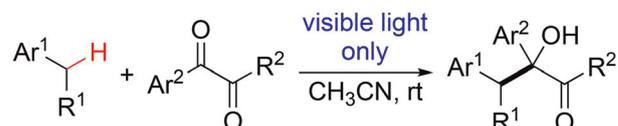
Supongsena Ao, Shuyang Zhang, Peter K. Karoki, Rohit Kousika, Gabriel A. Goenaga-Jimenez, Tyler McCoy, Wei Wang, Nara Han, Chang Geun Yoo, Chandrakanta Guchhait, Bimalendu Adhikari, Xianzhi Meng, Thomas A. Zawodzinski, Samuel Lalthazuala Rokhum* and Arthur J. Ragauskas*



13804

External photocatalyst- and additive-free visible light-driven direct benzylic C–H functionalization with 1,2-diketones

Xiaofeng Yu, Nan Huang, Yuhua Lu, Yanping Huo, Yang Gao, Xianwei Li and Qian Chen*

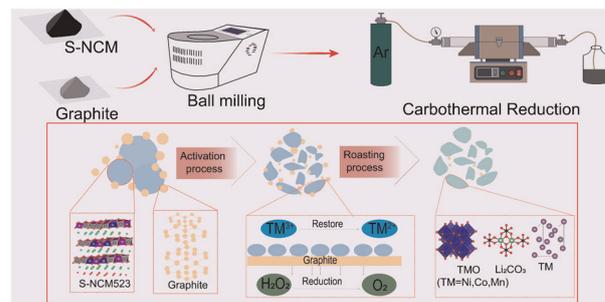


- broad substrate scope
- 54 examples, up to 93% yield
- external PC-, HAT reagent-, and additive-free

13811

Mechanochemical-assisted carbothermal reduction for recycling spent lithium-ion batteries: a green and economical recycling strategy

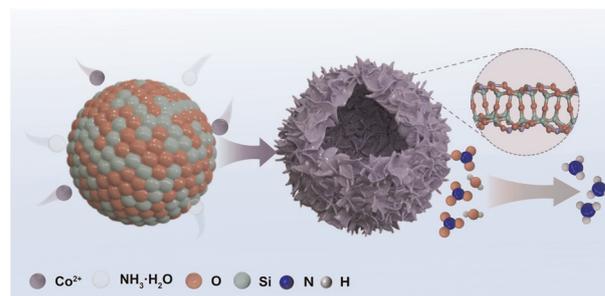
Weixin Li, Pengwei Li,* Bai Song, Peng Yue, Yinyi Gao, Dianxue Cao and Kai Zhu*



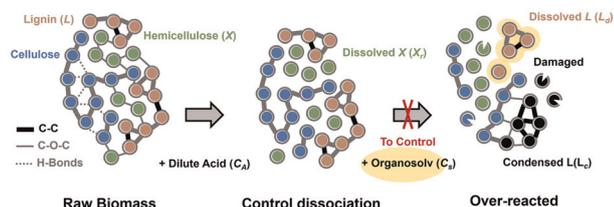
13824

Co–O–Si interface engineering for sustainable ammonia synthesis with nearly 100% faradaic efficiency

Weize Chen, Hui Su, Xuan Zheng, Xiaoping Chen, Jing Tang, Yi Li, Qingxiang Wang and Yun Ling*



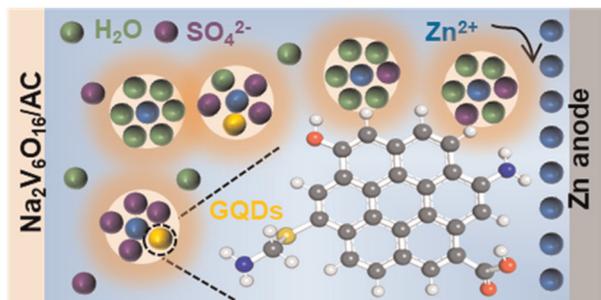
13834



Novel control of fractionation–depolymerization for rapid dissociation of lignin-associated xylan: toward complete lignocellulosic biomass valorization in lignin-first biorefinery

Jianguo Guan, Ho-Yin Tse, Huaimin Wang, Wancheng Zhao, Raffel Dharma Patria, Molly Meng-Jung Li, Song Cheng, Tuo Wang* and Shao-Yuan Leu*

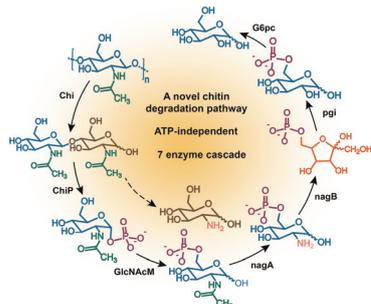
13849



Sulphur-doped graphene quantum dot electrolyte additives for enhanced cycling stability of aqueous zinc-ion batteries

Juanyun Li, Bin Wang, Zaohong Zhang, Peng Xie, Yanming Huang, Chengjie Xin and Ding Chen*

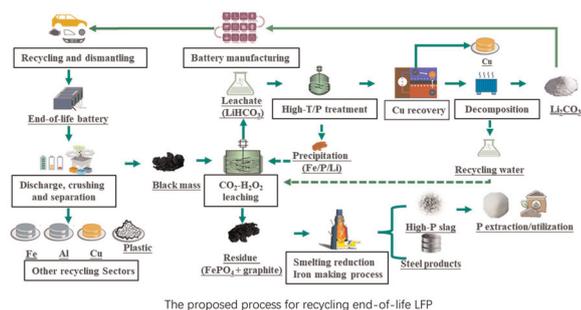
13863



ATP-independent enzymatic cascade for chitin-to-glucose bioconversion

Jin-Da Zhuang, Jin-Min Shi, Ai-Min Lu, Li Liu* and Josef Voglmeir*

13871



Oxidation-CO₂ leaching of spent LiFePO₄ for lithium extraction and impurity control

Zhiming Yan,* You Wu, Zepeng Lv, Shiyong Qin, Mingrui Yang, Anwar Sattar and Zushu Li*

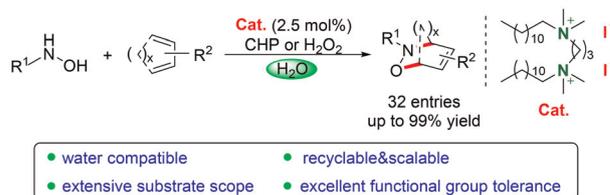


PAPERS

13885

A bifunctional recyclable Gemini surfactant catalyst for oxidative nitroso Diels–Alder reactions in water

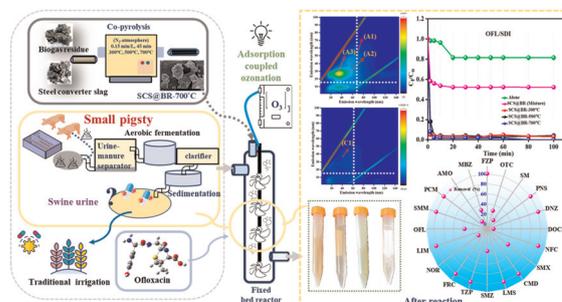
Longxia Jia, Hongling Liu, Weiwei Shi, Yingru Xu, Ruihan Sun, Jia Zuo, Bin Wang,* Jianjian Huang,* Fangrui Zhong and Dangui Wang*



13893

A greener strategy for ultra-fast adsorption-promoted ozonation of livestock-excreted pharmaceuticals by co-pyrolysis of steel converter slag and biogas residues: synergistic effects, environmental impacts and DFT study

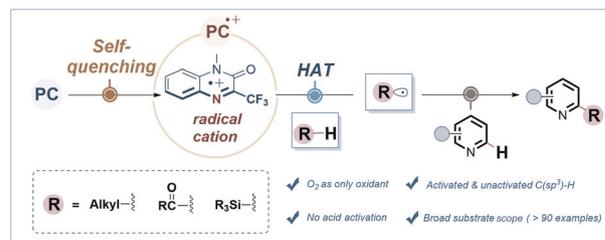
Muhammad Noman, Dinkayehu Tsegaye Awugichew, Guangwei Yu* and Tekuma Abdisa Bakare



13910

Direct C–H alkylation, acylation, and silylation of N-heteroarenes enabled by the self-quenching of quinolinones

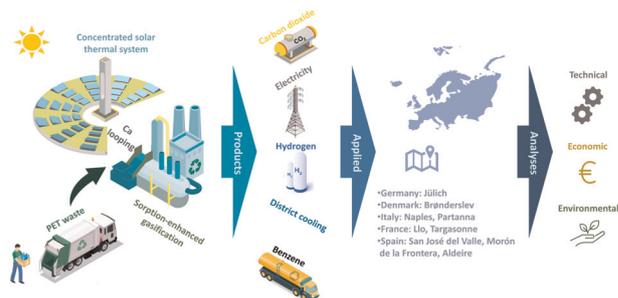
Bin Sun, Jianjie Wang, Qian Zhang, Yuanyi Chen, Yan Xu, Xiaohui Zhuang, Chun Lv, Xiao Yang, Weike Su and Can Jin*



13920

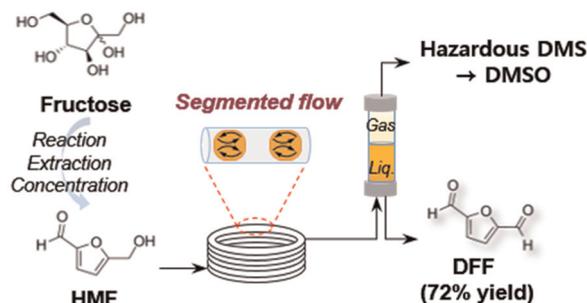
Transforming PET recycling via solar-assisted sorption-enhanced gasification for a circular economy: integrated techno-economic and life cycle assessment

Shouzhuang Li, Yuming Wen,* Yi Fang, Xian Li, Wujun Wang, Lili Zhang, Chi-Hwa Wang, Kevin M. Van Geem and Mika Järvinen



PAPERS

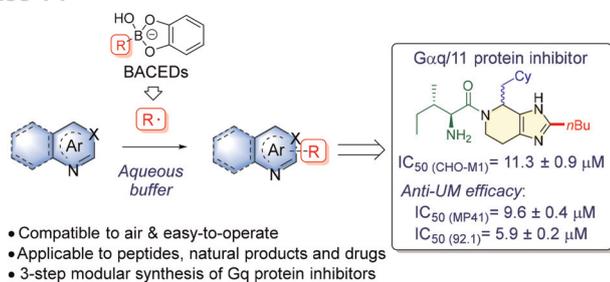
13936



Scalable synthesis of 2,5-diformylfuran in single-phase continuous flow and segmented flow

Min Jeong Kang, Yea Seul Jang and Chan Pil Park*

13944



Chemoselective Minisci alkylation in aqueous medium: a general strategy for functionalization of complex N-heteroarenes and biomolecules

Qi-Long Hu, Jun-Jie Deng, Jia Ye, Jian Li, Albert S. C. Chan, Hang Su* and Xiao-Feng Xiong*

CORRECTION

13953

Correction: A dynamic sulfur-rich network from silicone industry waste

Zixiao Wang, Yuanyuan Qiu, Zheju Cheng, Honglu Huang, Yang Sui, Xin Liu, Yijie Yang, Yue Lu, Huie Zhu, Qingqing Ji* and Jiajun Yan*

