

Green Chemistry

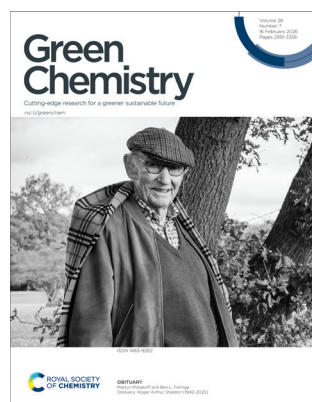
Cutting-edge research for a greener sustainable future

rsc.li/greenchem

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See Martyn Poliakoff and Ben L. Feringa, pp. 3001–3005.

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Inside cover
See Xiaonan Wang, Shanying Hu *et al.*, pp. 3126–3140.

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OBITUARY

3001

Obituary: Roger Arthur Sheldon (1942–2025)

Martyn Poliakoff and Ben L. Feringa

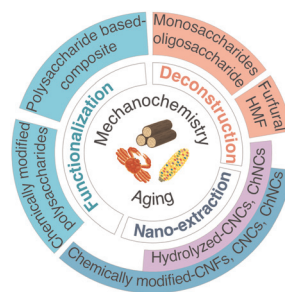


CRITICAL REVIEWS

3006

Mechanochemical transformations of polysaccharides to value added products: a review with Green Chemistry evaluation

Galen Yang, Yasmeen Jaber, Edmond Lam and Audrey Moores*



- 5 to 50-fold more efficient reactions
- Less reagent and auxiliaries
- New reactivity & selectivity
- Safer synthesis



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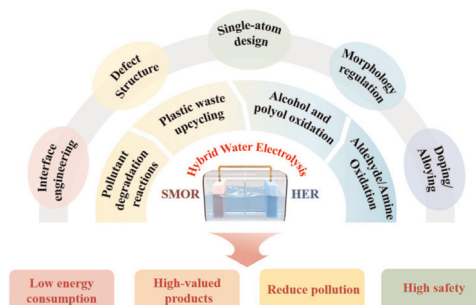
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CRITICAL REVIEWS

3043

Hybrid water electrolysis toward energy-efficient hydrogen production coupled with value-added chemical synthesis

Yilin Wu and Pengzuo Chen*

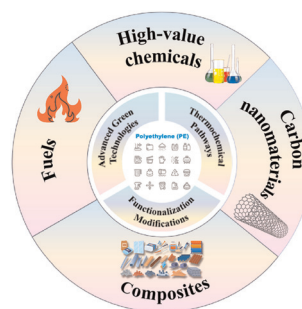


TUTORIAL REVIEW

3073

Research progress of high value utilization of waste polyethylene plastics

Mingjun Xiao* and Xihang Dai

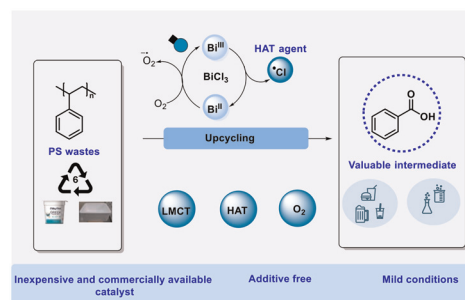


COMMUNICATIONS

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Photochemical upcycling of polystyrene waste by BiCl_3

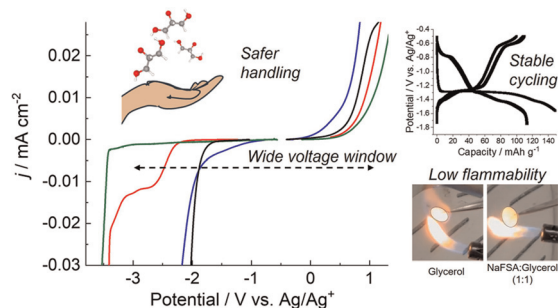
S. Srividya, Apurba Kumar Pal and K. Geetharani*



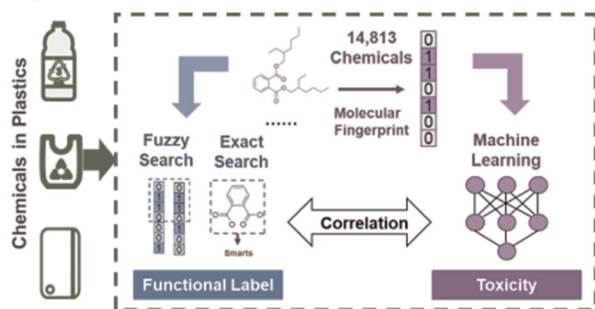
3119

Glycerol electrolytes for safer and more sustainable sodium ion batteries

Zachary T. Gossage,* Teppei Furuichi, Tomooki Hosaka, Kei Shibuya and Shinichi Komaba*



3126

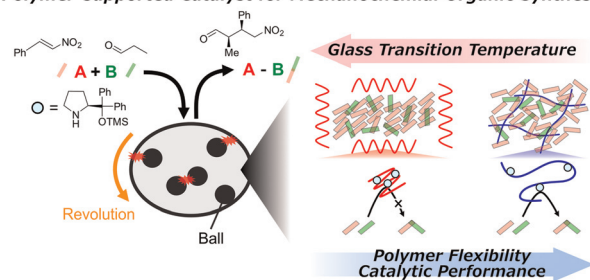


Toward comprehensive scientific information on plastic-related chemicals powered by artificial intelligence

Kai Zhao, Xiting Peng, Ran Tao, Yuchen Su, Shiyue Huang, Hang Fu, Xiaonan Wang* and Shanying Hu*

3141

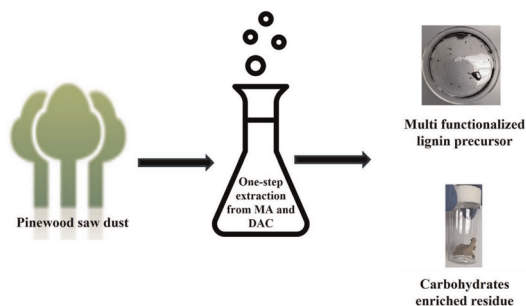
Polymer-supported Catalyst for Mechanochemical Organic Synthesis



Solvent-less mechanochemical asymmetric reactions in a ball mill utilizing a polymer-supported Hayashi–Jørgensen catalyst: effects of the polymer backbone and flexibility on its catalytic performance

Kento Hiroishi, Hikaru Matsumoto,* Hidetaka Kasai, Masanori Nagao, Eiji Nishibori and Yoshiko Miura*

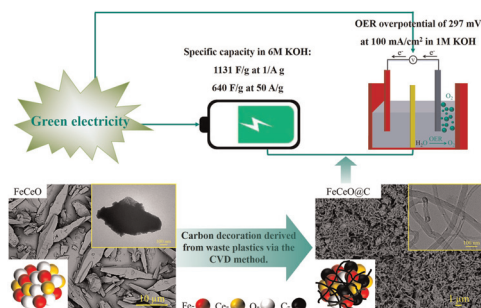
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Green chemistry design of one-step extraction of multi-functionalized lignin-precursors directly from biomass

Kavya Ganesan, James Sternberg and Srikanth Pilla*

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Constructing bifunctional electrodes of FeCeO with tunable carbon decoration from waste plastics for efficient energy storage and the oxygen evolution reaction

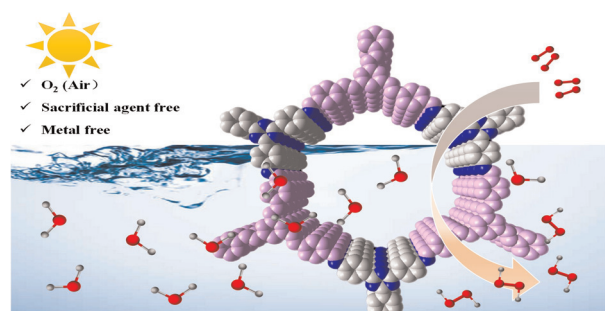
Shizhen Zhang, Xu Hou,* Jing Huang, Li Yin and Enxian Yuan*



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Triazine-functionalized donor– π –acceptor covalent organic frameworks with oligo(phenylenevinylene) bridge for efficient photocatalytic H_2O_2 evolution

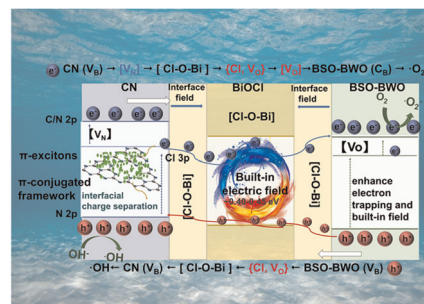
Jie Fan, Shiguang Lv, Yayu Yan, Qiaohong Li,*
Shao-Xia Lin* and Daqiang Yuan*



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Rational co-engineering of π -exciton and oxygen vacancy via a mild halide-exchange strategy: a sustainable blueprint for highly efficient S-scheme photocatalysts

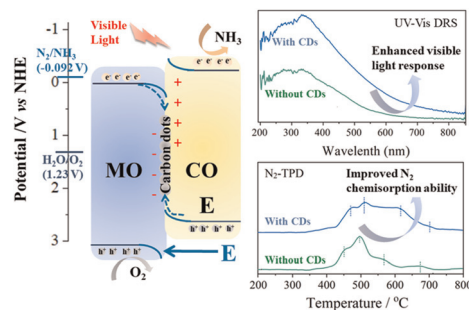
Jingyue Hu,* Yuanting Wu,* Weizhi Tian, Lihui Guo,
Xinmeng Zhang, Ou Hai, Hulin Liu, Yunlong Xue and
Mato Knez



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Embedded carbon dot mediator in a Ce-MoO_{3-x} heterojunction for improved visible-light-driven N₂ fixation: performance and interfacial activation mechanism

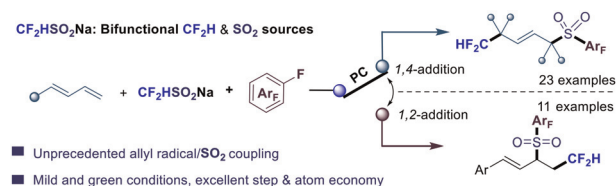
Huaiwei Zhang,* Liang Bao, Ying Pan, Lulu Xu* and
Wei Wang



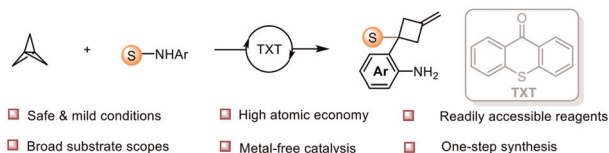
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Photoredox-catalyzed cascade difluoromethylation/SO₂ reintegration/polyfluoroarylation of conjugated dienes with a bifunctional CF₂HSO₂Na reagent

Kehan Jiao, Yunliang Guo, Jiuli Xia, Kaixuan Chen,
Lihan Zhu, Ying Dong, Jiao Qu, Guangfan Zheng,*
Jiaqiong Sun,* Tao Xiong and Qian Zhang



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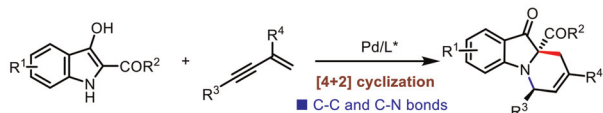


Construction of sulfur-substituted methylenecyclobutanes via thioaromatization of [1.1.1]propellane with sulfenamides

Jun Hong, Tianbao Wu, Zhihao Yu, Yu Zhu, Daijun Tang, Minyan Wang* and Xinpeng Jiang*

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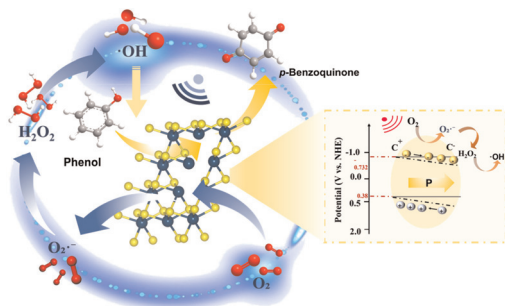
Asymmetric Sequential Hydroalkylation and Hydroamination of 1,3-Enynes



Palladium-catalyzed asymmetric sequential hydroalkylation and hydroamination of 1,3-enynes with 3-hydroxyindoles

Qiuyu Li, Ruixue Wu, Tianbao Wu, Renkang Wei, Zhijiao Li, Shang Gao, Minyan Wang,* Hequan Yao* and Aijun Lin*

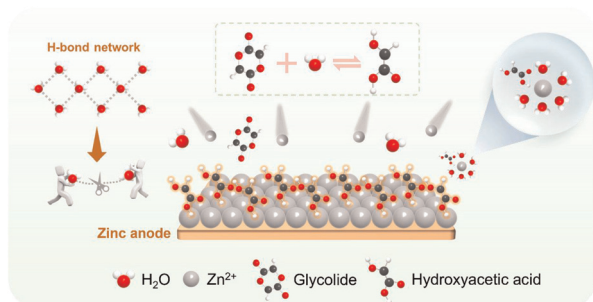
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Piezocatalytic oxidation of lignin-derived phenol to *p*-benzoquinone: a sustainable route for green polymerization inhibitors

Xinlei Ma, Bo Zhang,* Xin Huang, Qing Xu and Roger Ruan

3258



Trace electrolyte additives dynamically regulating the zinc anode interface towards stable zinc-based energy storage

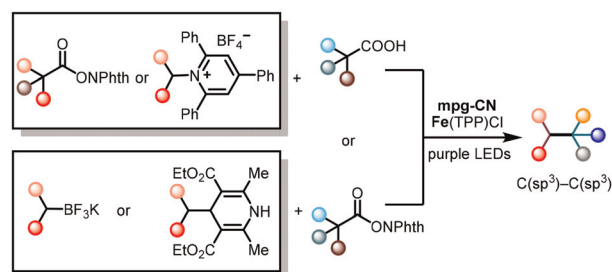
Xinyu Yang, Ke Zhang and Liubing Dong*



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Semi-heterogeneous dual iron/photocatalytic decarboxylative C(sp³)-C(sp³) cross-coupling via radical sorting

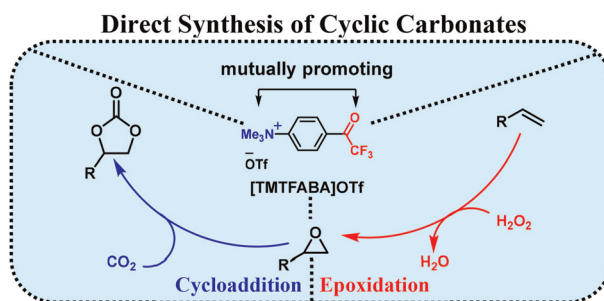
Yajun Sun, Tengfei Kang,* Yingdi Feng, Huaming Sun, Geyang Song and Dong Xue*



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Direct synthesis of cyclic carbonates from olefins and CO₂ via ionic liquid catalysis with mutually promoting bifunctional groups

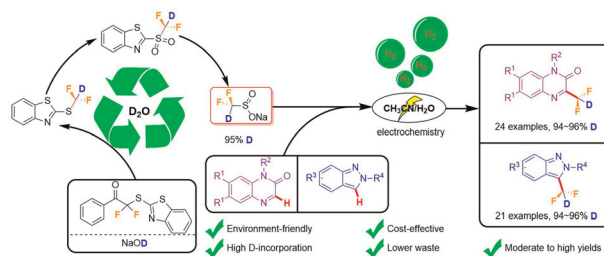
Li-Feng Xu, Wen-Jun Xie, Shan-Shan Chen, Alexander O. Terent'ev, Hong-Ru Li* and Liang-Nian He*



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Electrochemical C(sp²)-H deuterodifluoromethylation of quinoxalines and 2H-indazoles with CF₂DSO₂Na

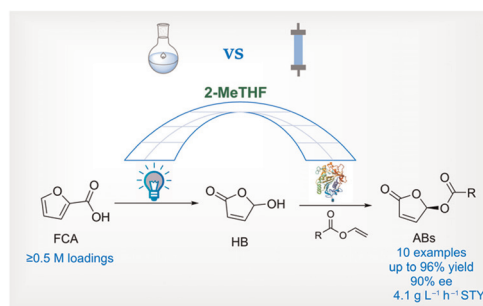
Yuhang Ding, Xin Liu, Yanlin Wu, Meichao Li* and Zhenlu Shen*



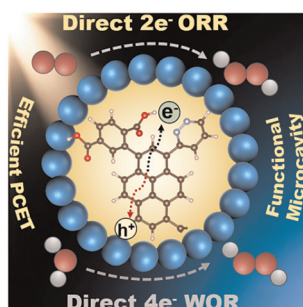
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Asymmetric photoenzymatic synthesis of chiral γ -acyloxybutenolides from 2-furoic acid in 2-methyltetrahydrofuran: from batch to flow process

Yi He and Ning Li*



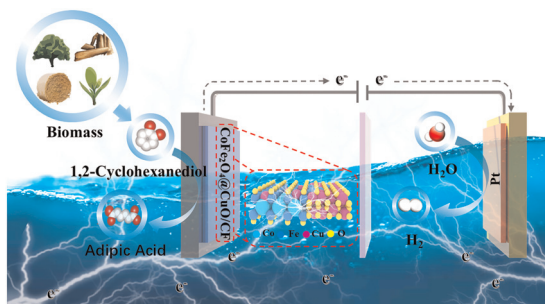
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Spatially confined proton-coupled electron transfer in functional microcavities for photocatalytic H₂O₂ production in pure water

Yanzhuo Zhao, Xiaoya Li, Linghao Liu, Yuanying Liu, Yan Li, Xin Zhang, Hang Wang, Yichao Huang, Lin Wang* and Chuan-De Wu*

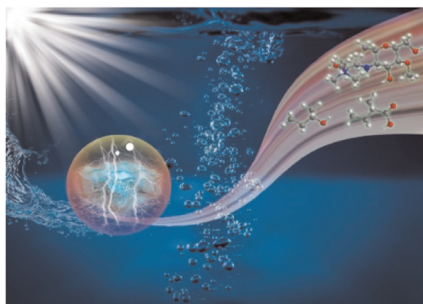
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Electrocatalytic oxidation of 1,2-cyclohexanediol to adipic acid with high faradaic efficiency under high current density over a CoFe₂O₄@CuO/CF catalyst

Xuzheng Cao, Gang Yan,* Qi Zhao, Huaqiao Tan,* Wensi Tang, Aicen Li and Yangguang Li*

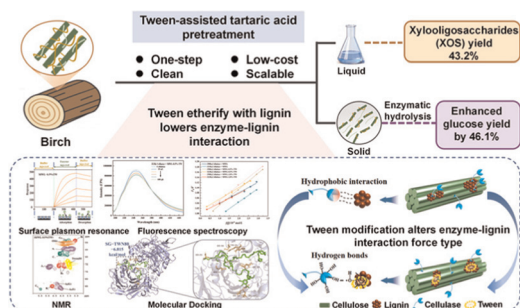
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High-performance multi-component synergistic hydrogel electrolyte with enhanced ion transport for flexible zinc–air batteries and wearable sensors

Qiusheng Zhou,* Li Song, Minmin Song, Linfang Lu, Weihao Pan, Xianying He, Chenxu Zhao, Ziyu Zhao and Chuanyin Xiong*

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A green strategy for co-production of xylooligosaccharides and fermentable sugars from birch via tween-assisted tartaric acid pretreatment

Rutong Jiang, Bin Bian, Ruoyan Li, Qijun Wu, Daihui Zhang, Caoxing Huang, Chenhuan Lai,* Mi Li* and Qiang Yong

