

# Green Chemistry

Cutting-edge research for a greener sustainable future

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**Cover**  
See Javier Pérez-Ramírez *et al.*, pp. 174–185.

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**Inside cover**  
See Eun Yeol Lee *et al.*, pp. 21–36.

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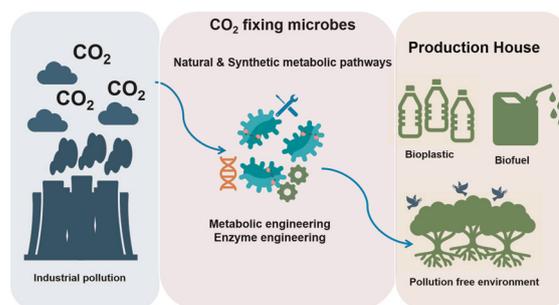
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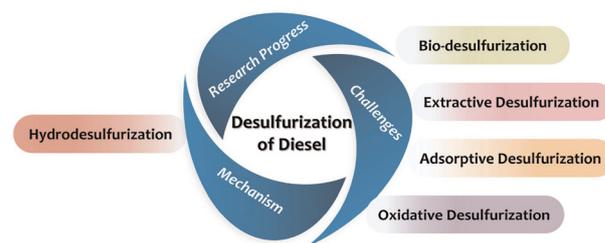
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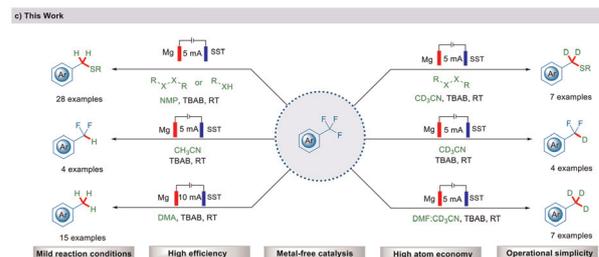


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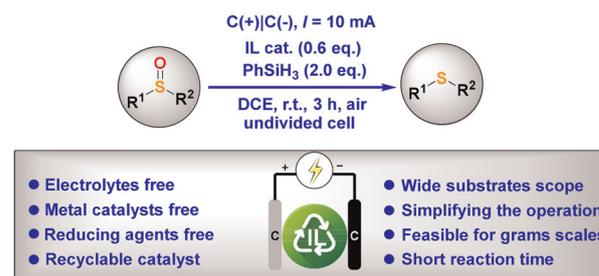
Zhimin Xu, Zonghao Zhou, Xiaochen Wang, Yuxia Yang, Yi Pan and Yi Wang\*



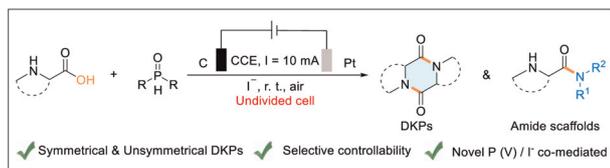
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Zhaoxin Wei, Ziren Chen, Fei Xue, Bin Wang, Yu Xia, Shaofeng Wu, Yonghong Zhang, Weiwei Jin, XueFeng Jiang\* and Chenjiang Liu\*



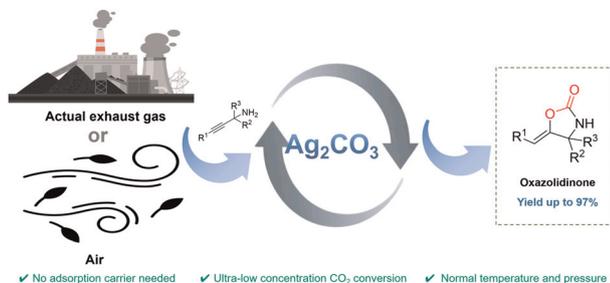
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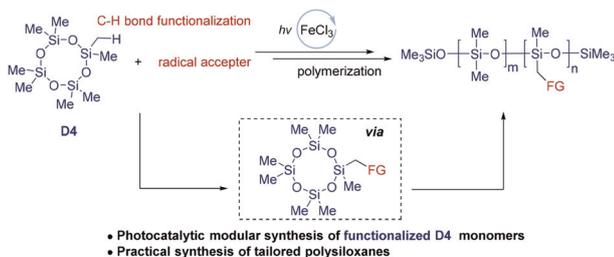
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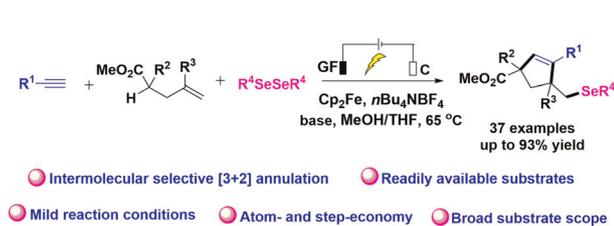
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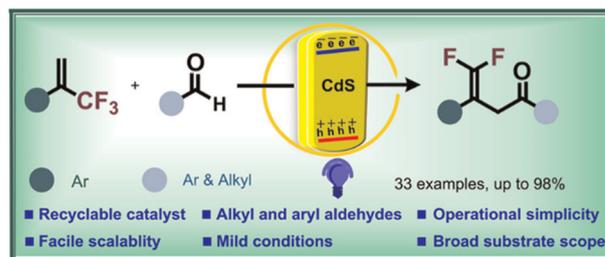


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Kashif Hussain, Fukai Xie and Wen Dai\*

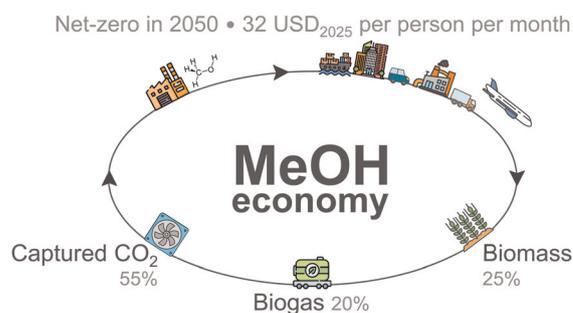


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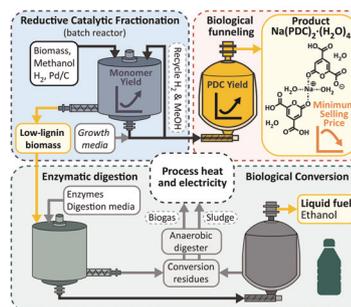
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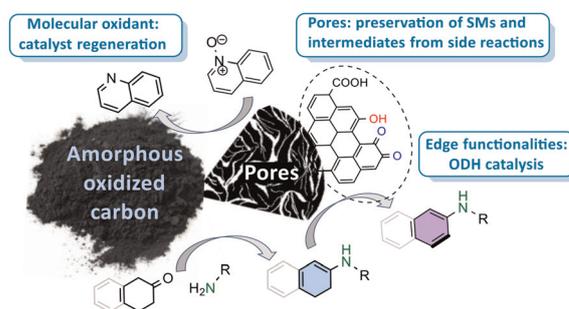
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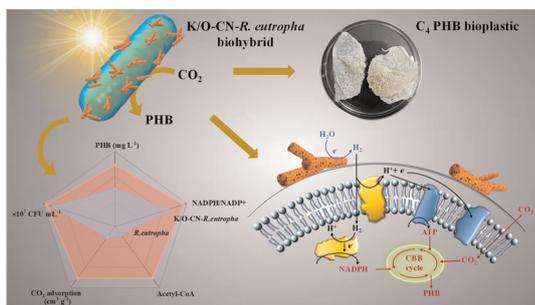
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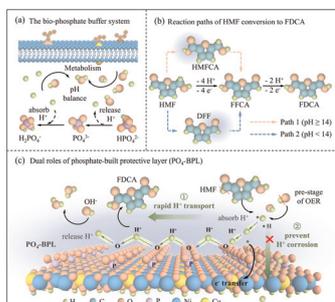
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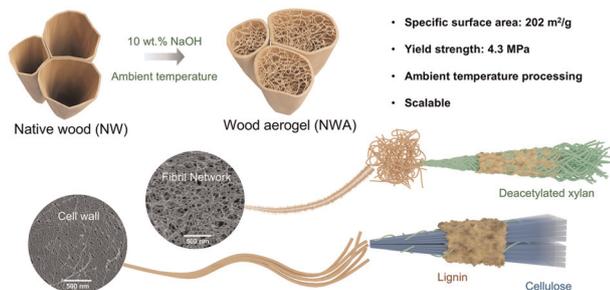
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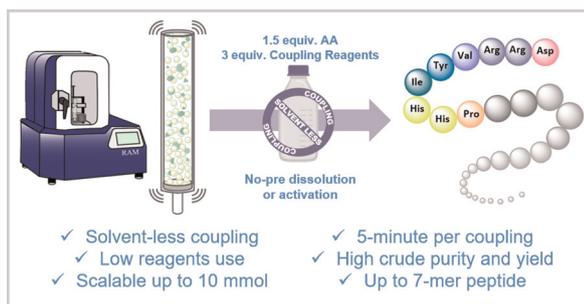
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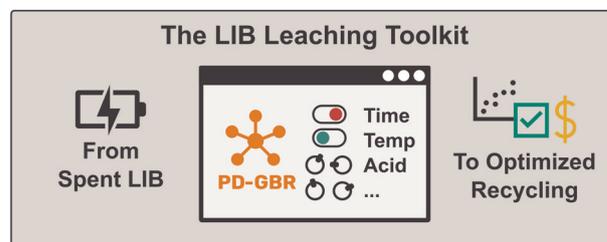
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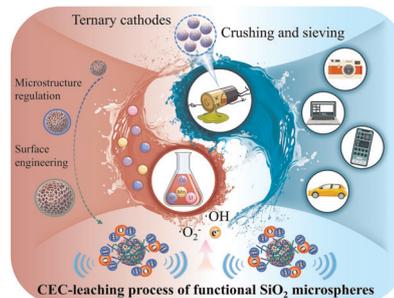
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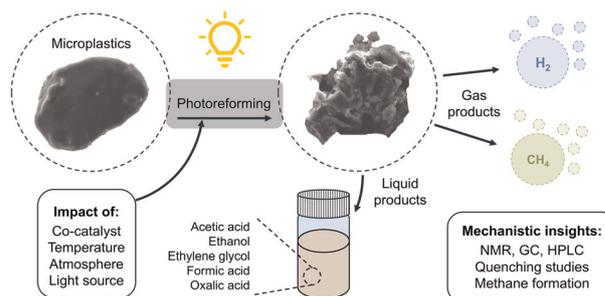
Man Yang, Shuhao Qin,\* Youchang Yang, Mingmi Wu, Ting Lei, Yufei Liu and Huiju Shao\*



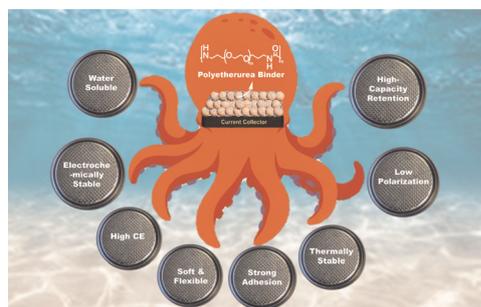
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Madeline Weisweiler, Adrian Ertl, Cornelia von Baeckmann, Anil Kumar Sihag, Christian M. Pichler, Freddy Kleitz, Dominik Eder and Alexey Cherevan\*



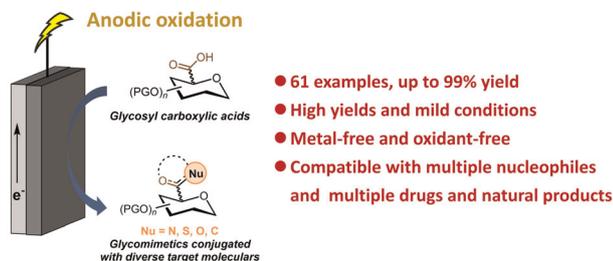
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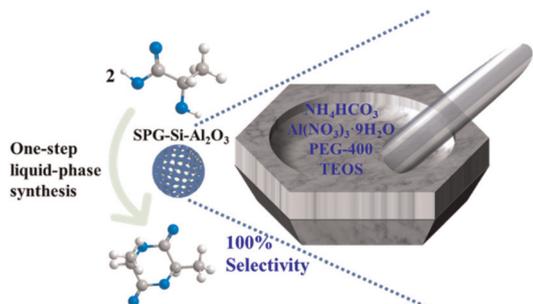
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### An electrochemically promoted modular synthesis of diverse glycomimetics via acyloxyphosphonium ions

Yi-Min Jiang, Cheng-Lin Ding, Guizhen Zhang, Hongbao Sun\* and Jie Liu\*

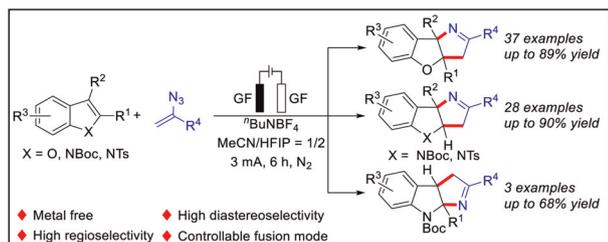
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### Si-doped $\gamma$ -Al<sub>2</sub>O<sub>3</sub> from solid-phase grinding for highly efficient one-step production of L,L-lactide

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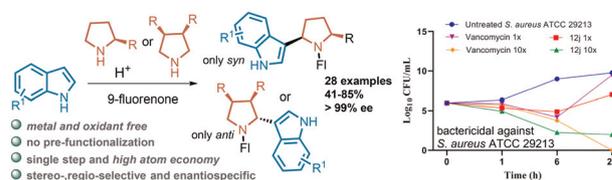
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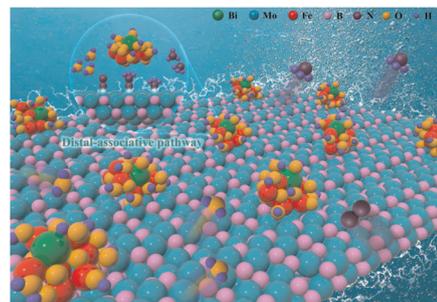
Subhajit Saha, Soumya Ranjan Bag, Abdul Akhir, Deepanshi Saxena, Rahul Maitra, Sidharth Chopra\* and Chandan K. Jana\*



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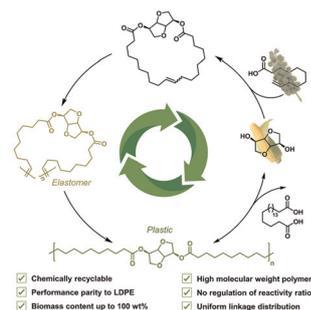
Kun Cheng, Shaobin Li,\* Qingyu Cheng, Li Zhang,\* Yufeng Jiang, Fengbo Li and Xiaoqing Lv



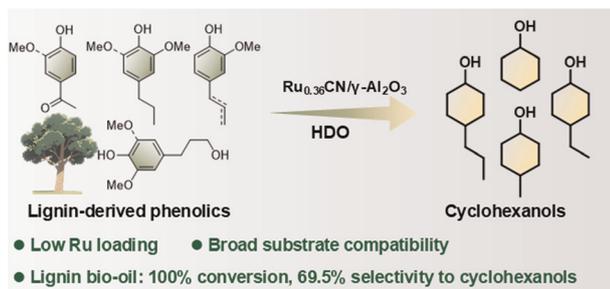
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### Chemically recyclable, fully biobased polyolefins with performance parity to low-density polyethylene

Wei Sun, Yuzhe Pang, Yucheng He, Zhenyang Luo, Puyou Jia,\* Yonghong Zhou\* and Ye Sha\*



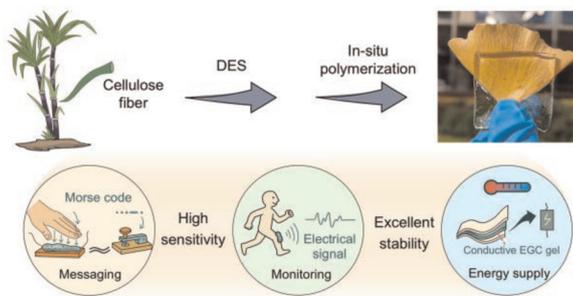
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### Selective hydrodeoxygenation of lignin phenolics to cyclohexanols over low-Ru catalysts

Rumin Ma, Xueying Gao, Xiancheng Li, Shuizhong Wang\* and Guoyong Song\*

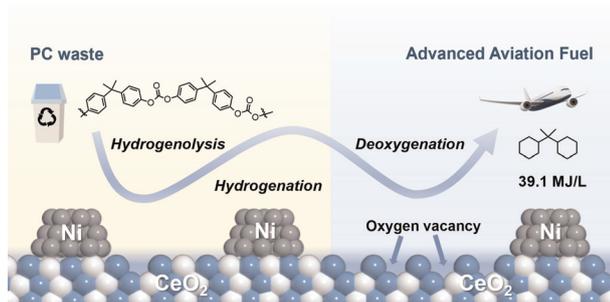
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Xiangyu Lin, Jie Li, Fei Fu, Ziming Zhu, Yuandong Xu,\* He Liu\* and Xu Xu\*

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Yushuang Huang, Jiawei Xie,\* Yisong Zhou, Qianqian Song, Yuan Lei, Chang-an Zhou, Chao Wang, Kui Ma, Lei Song, Hairong Yue and Ji-Jun Zou

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### An ion-pair as a superacidic pre-catalyst for the synthesis of indole alkaloids: a novel entry into the Fischer indole synthesis

Pooja Sivaganesan, Chibisree Elanchezian, Diksha Bansal, Mrinal Kanti Das\* and Saikat Chaudhuri\*

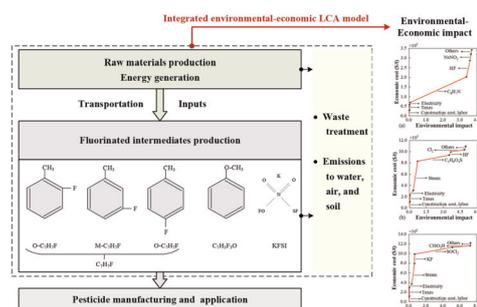
- Superacidic Bronsted acid pre-catalyst
- Natural product scaffolds
- Aqueous conditions
- Non-Metal mediated approach
- First report ion-pair-catalyzed Fischer indole synthesis
- Metal-free & Aqueous conditions
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- Sustainability toolbox
- Operational simplicity
- 45 examples from good to excellent yields of carbazole derivatives



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### Exploring the environmental and economic performance of fluorinated intermediates in pesticide manufacturing: a life cycle assessment perspective

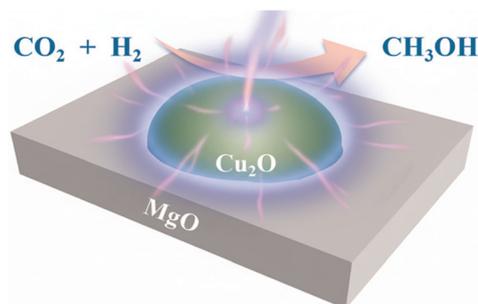
Yunzhi Zhao, Tianzuo Zhang, Jinglan Hong, Ruiqi Jin and Xiaotian Ma\*



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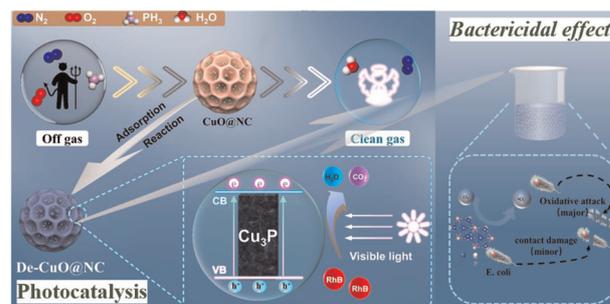
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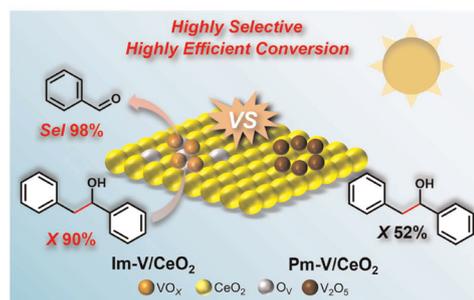
Zhongxian Wang, Jiuyang He, Jiayu Feng, Chaoyang Peng, Can Niu, Yixing Ma, Xin Sun, Fei Wang,\* Lian Wang,\* Ping Ning and Kai Li\*



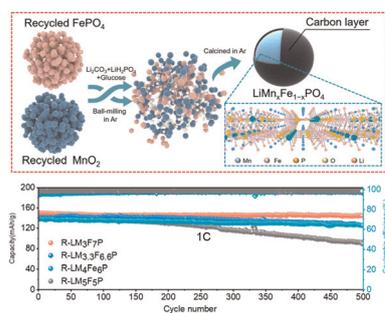
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### Engineering oxygen vacancies on ceria via vanadium oxide dispersion for selective photocatalytic cleavage of lignin C–C bonds

Yongqi Zhuang, Yuguo Dong, Yanmei Zheng, Wenjun Zhang, Lin Dong and Zupeng Chen\*



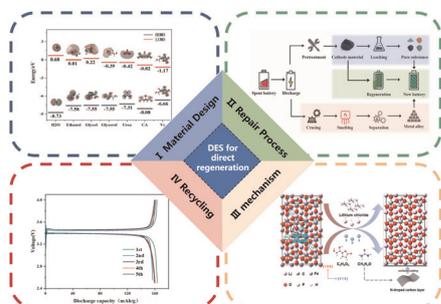
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### Upcycling lithium extraction by-products from spent lithium-ion batteries into high-voltage polyanionic $\text{LiMn}_x\text{Fe}_{1-x}\text{PO}_4$

Fan Xiao, Lehan Zhu, Zhangjun Wu, Haotian Zhu, Juan Xia, Jiannan Zhu,\* Zeheng Yang\* and Weixin Zhang\*

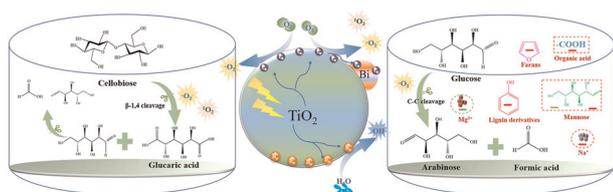
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### Using green deep eutectic solvents for targeted regeneration to improve the cycle life of spent lithium iron phosphate batteries

Jin Wu, Lin Chen,\* Ruichao Zhu, Yixuan Zhou, Chuqing Cao, Liang Zhu and Jun Zhang

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### Cellulose and glucose photorefining over non-noble $\text{Bi}^0$ -modified $\text{TiO}_2$ with oxygen vacancies: unraveling the effects of lignocellulosic derivatives and oxidation mechanism

Tingting Zhang, Xinyao Zhang, Suhang Cheng, Dong Tian, Li Zhao, Jiufu Chen, Jinguang Hu and Fei Shen\*

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### Constructing recyclable biomass-derived thermosetting polymers via a solvent-free and catalyst-free Knoevenagel condensation reaction

Yaowei Zhu, Tongtong Man, Jiayi Chen, Xiaonong Zhang, Mingming Zhao, Li Chen\* and Chunsheng Xiao\*

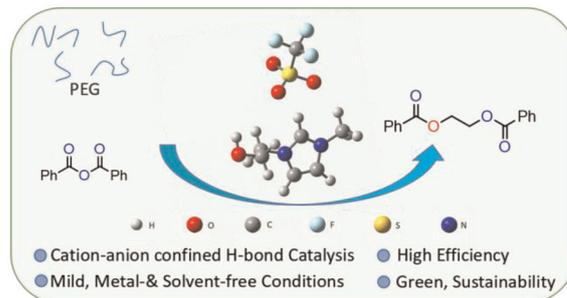


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### A strategy of H-bond confinement catalysis for efficient degradation of polyethylene glycol into glycol diester over an OH-functionalized ionic liquid

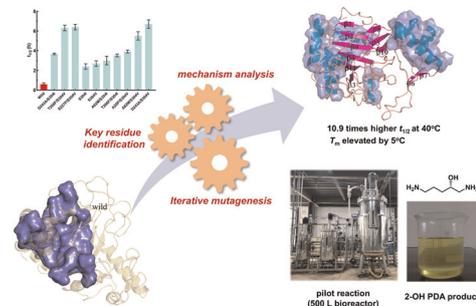
Xiaoqian Chang,\* Yunpeng Xu, Chunliang Hou, Ruihan Wang and Xiaoyang Chang



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### Engineering the thermostability of lysine hydroxylase for scalable production of (2S)-hydroxy-1,5-pentanediamine from L-lysine

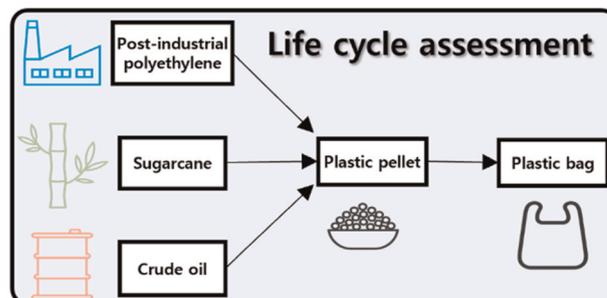
Alei Zhang, Zhijie Zheng, Yangyang Li, Feifei Chen, Chaoqiang Wu and Kequan Chen\*



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### Comparative life cycle assessment study of virgin polyethylene and bio-polyethylene, with recycled polyethylene from uncontaminated post-industrial film

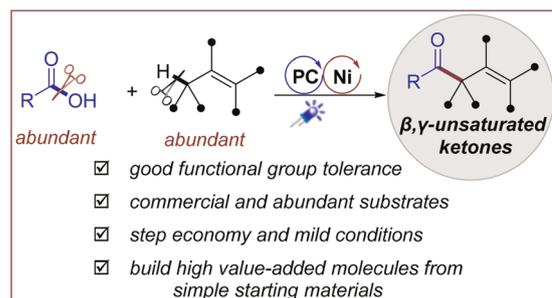
Ahdo Kim, Teuku Naraski Zahari, Nobuteru Edayoshi, Pin Juo Chou, Toshiki Yamamoto, Pin Yen Chou, Kei Saito\* and Benjamin McLellan\*



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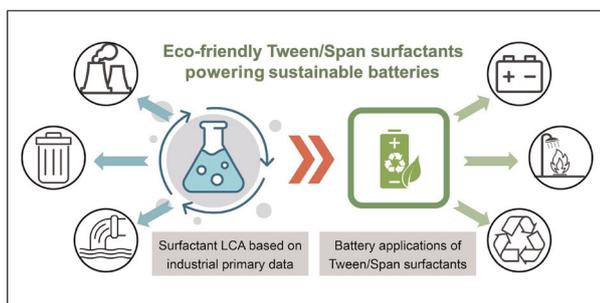
### Direct allylic C(sp<sup>3</sup>)-H acylation of alkenes via metallaphotoredox catalysis using carboxylic acids

Xin Ge, Can-Quan Ye, Mei Huang, Meng-Ning Wang, Jie-Yu Chen, Ri-Yuan Tang\* and Bo Yang\*



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### Green surfactants powering sustainable batteries: industrial-scale life cycle assessment of Tween and Span surfactants for battery systems

Shiyu Wang, Likun Zhao, He Ye, Zhan Shi, Huakui Zhang, Fengyin Zhou, Simin Xu, Lei Xing, Dihua Wang\* and Huayi Yin\*

## CORRECTION

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### Correction: Deep eutectic solvent engineering: a novel ternary system for efficient lignocellulose extraction

Guanzheng Wu, Yu Cheng, Caoxing Huang, Cheng Yong\* and Yu Fu\*

