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

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Inside cover
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Introduction to “Make polymers sustainable, why and how?”

Maiyong Zhu,* Gerard Lligadas, Fiona L. Hatton, Garret Miyake and Antoine Buchard

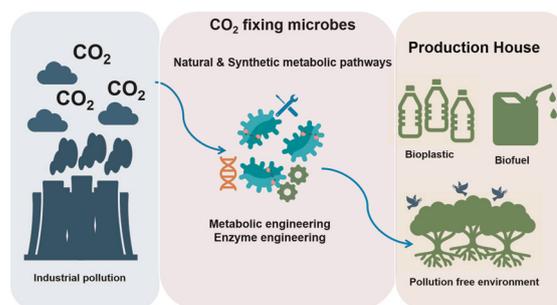
Green Chemistry | Polymer Chemistry
Make polymers sustainable, why and how?
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Zeeshan Mustafa, Naeem Auroona, Arslan Sarwar and Eun Yeol Lee*



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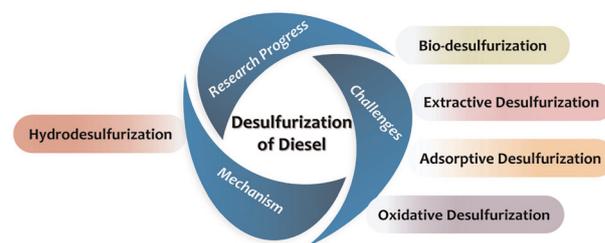
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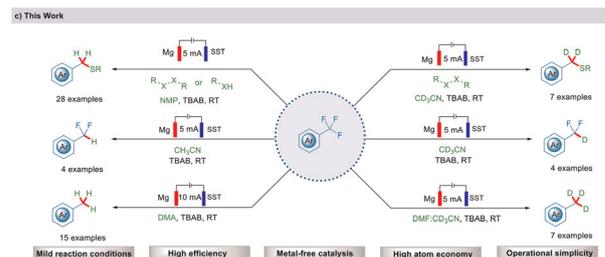


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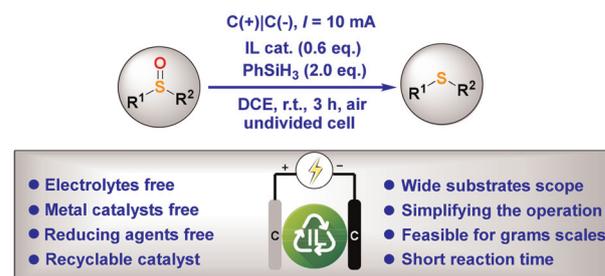
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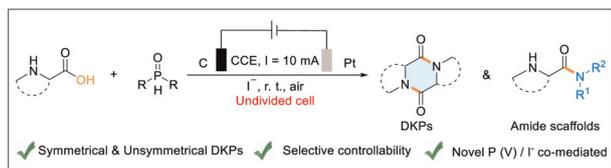
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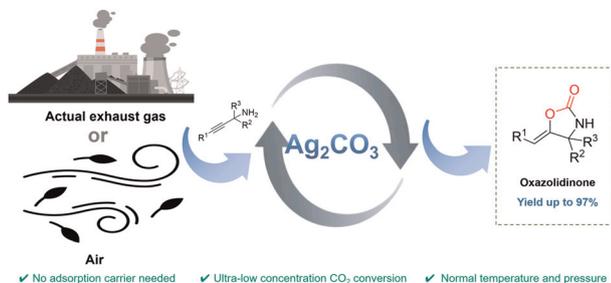
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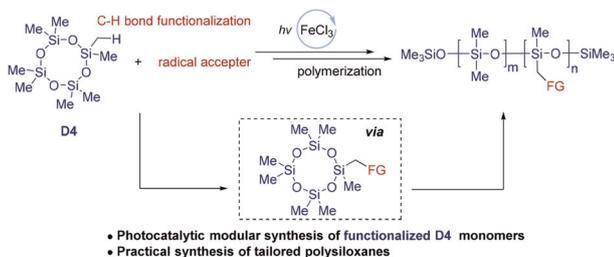
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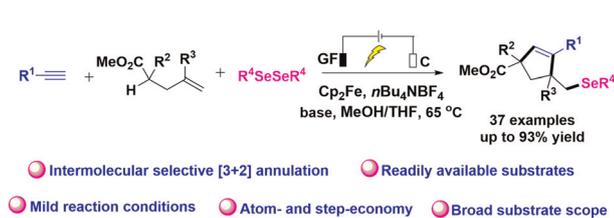
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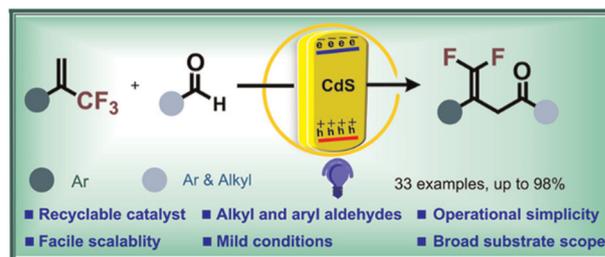


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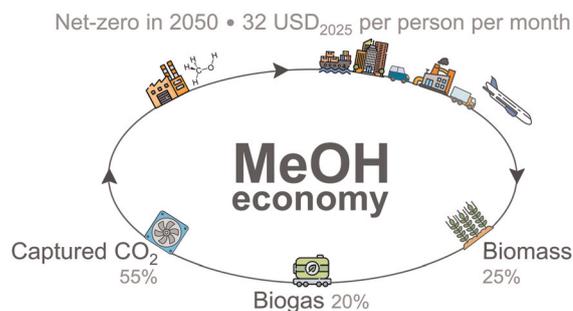


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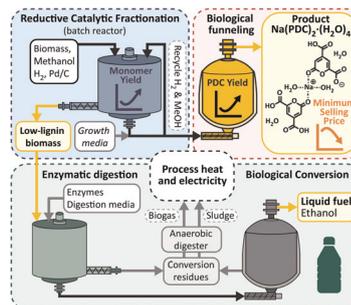
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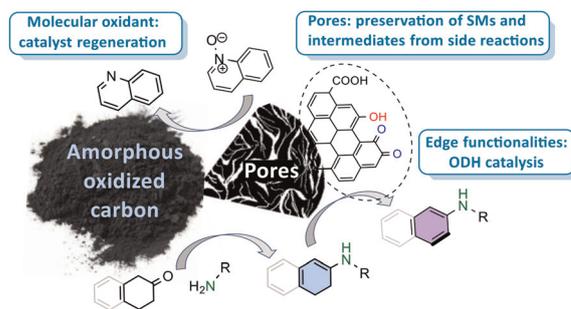
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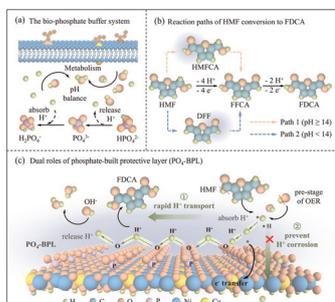
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Low indoor light-driven CO₂ conversion into visible C₄ bioplastic via homogeneous non-metal-based biohybrids under photoexcitation

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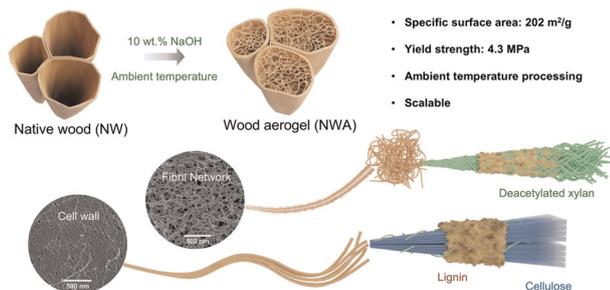
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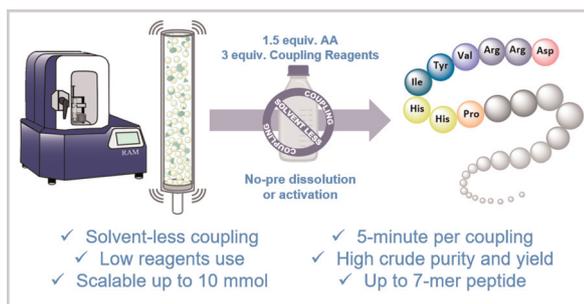
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Green and efficient cell wall nano-reconstruction under ambient temperature towards strong cellulosic aerogels

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Resonant acoustic mixing enables solvent-less amide coupling in solid-phase peptide synthesis

Alice Nanni, Panayiotis Bilalis and Magnus Rueping*

- ✓ Solvent-less coupling
- ✓ Low reagents use
- ✓ Scalable up to 10 mmol
- ✓ 5-minute per coupling
- ✓ High crude purity and yield
- ✓ Up to 7-mer peptide



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Solvent-less environmentally benign amino ester, amide, and peptide synthesis enabled by resonant acoustic mixing

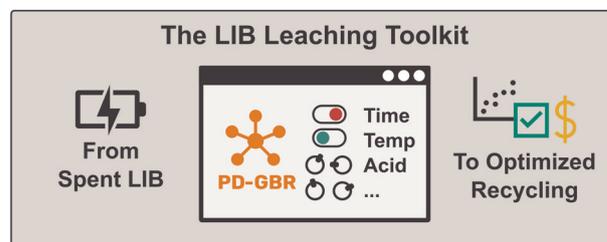
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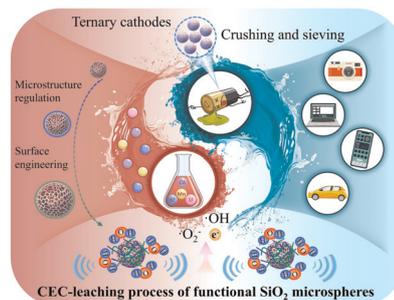
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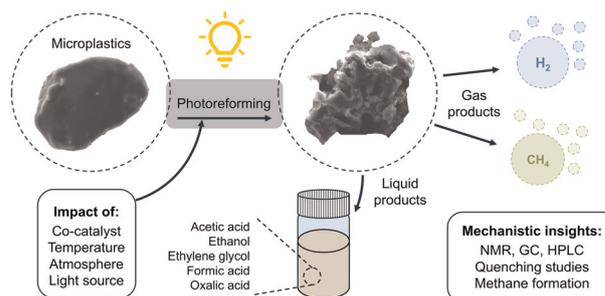
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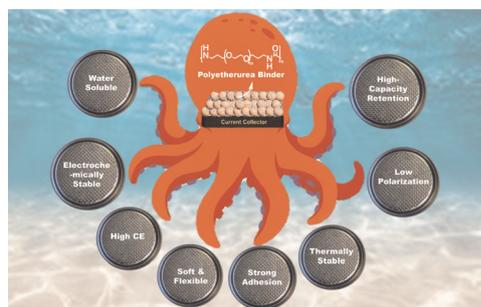
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Photocatalytic upcycling of PET into methane, hydrogen and high-value liquid products

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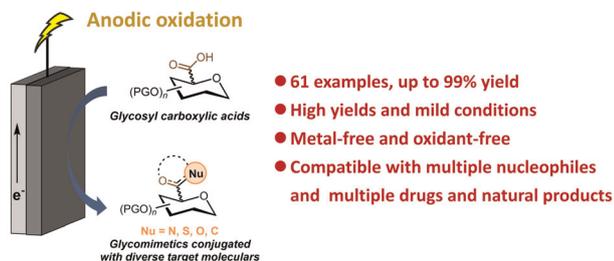
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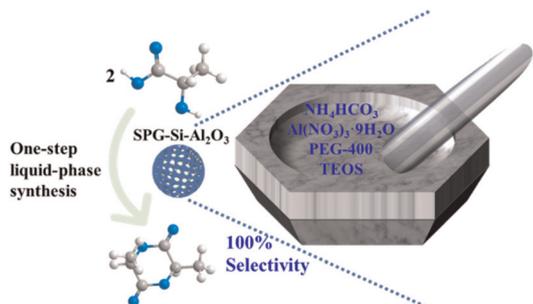
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An electrochemically promoted modular synthesis of diverse glycomimetics via acyloxyphosphonium ions

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

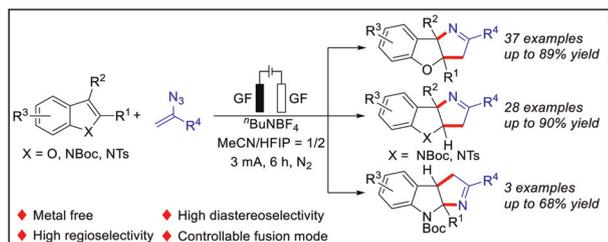
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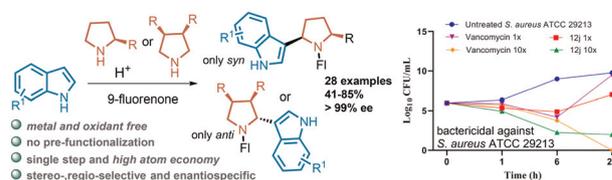
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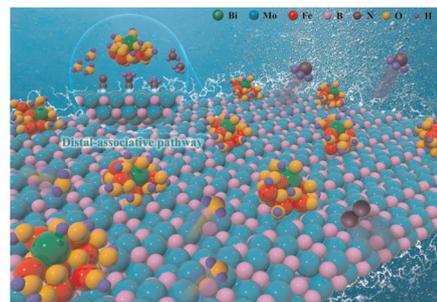
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Bi-doped directional spin-polarised electron injection modulates MBene surface d–d coupling to promote nitrogen reduction kinetics

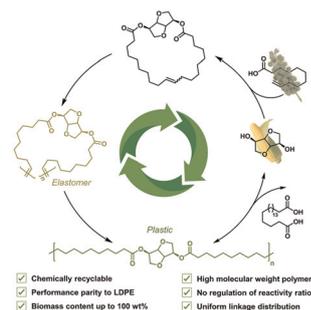
Kun Cheng, Shaobin Li,* Qingyu Cheng, Li Zhang,* Yufeng Jiang, Fengbo Li and Xiaoqing Lv



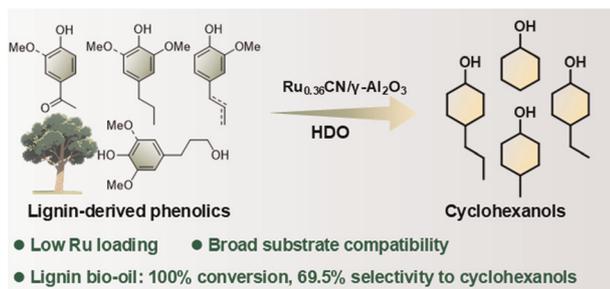
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Chemically recyclable, fully biobased polyolefins with performance parity to low-density polyethylene

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



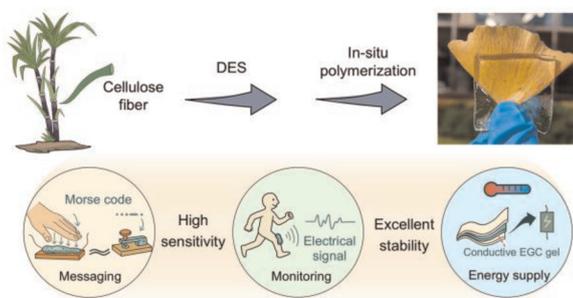
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Selective hydrodeoxygenation of lignin phenolics to cyclohexanols over low-Ru catalysts

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

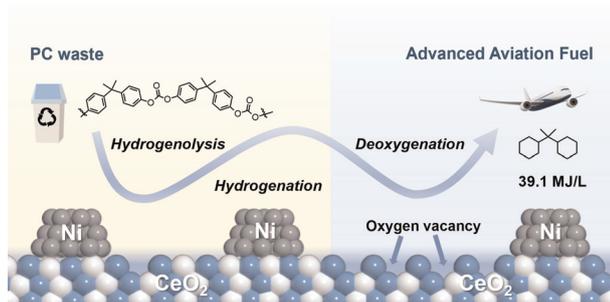
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Eco-designed cellulose-reinforced deep eutectic gels with synergistic mechanical strength, ionic conductivity, and freezing tolerance for flexible electronics

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

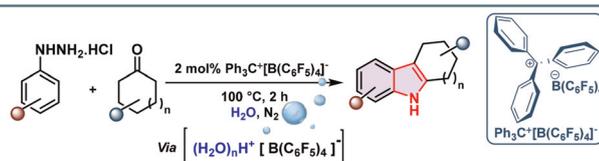
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Chemical recycling of polycarbonate waste into advanced aviation fuel candidates via nickel–oxygen vacancy dual sites

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*

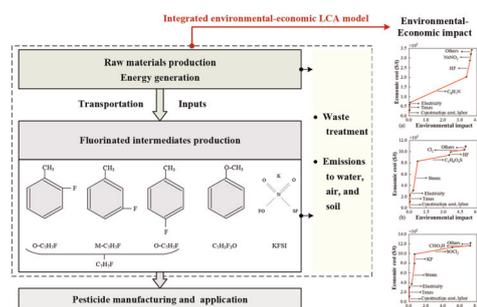
- Superacidic Bronsted acid pre-catalyst
- Natural product scaffolds
- Aqueous conditions
- Non-Metal mediated approach
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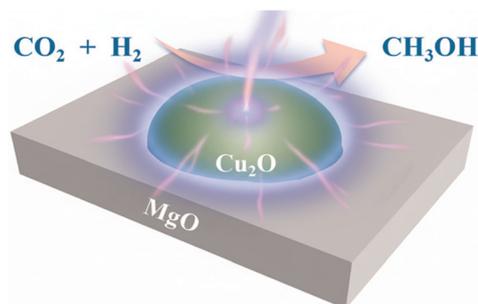
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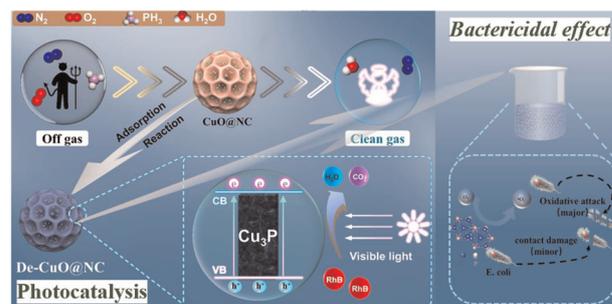
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Low-temperature purification of phosphine (PH₃) using CuO@NC sorbents: simultaneous pollutant removal and Cu₃P resource recovery

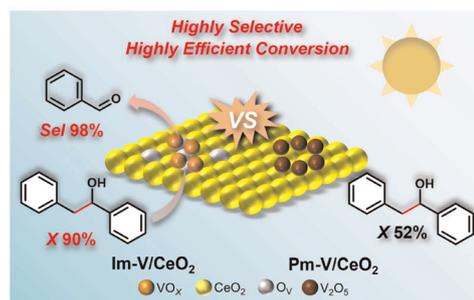
Zhongxian Wang, Jiuyang He, Jiayu Feng, Chaoyang Peng, Can Niu, Yixing Ma, Xin Sun, Fei Wang,* Lian Wang,* Ping Ning and Kai Li*



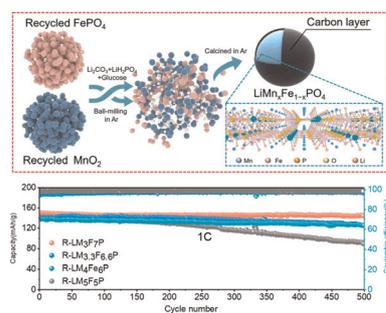
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Engineering oxygen vacancies on ceria via vanadium oxide dispersion for selective photocatalytic cleavage of lignin C–C bonds

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



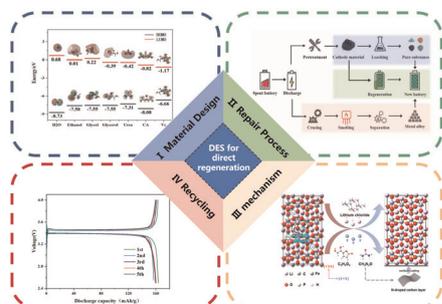
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Upcycling lithium extraction by-products from spent lithium-ion batteries into high-voltage polyanionic $\text{LiMn}_x\text{Fe}_{1-x}\text{PO}_4$

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

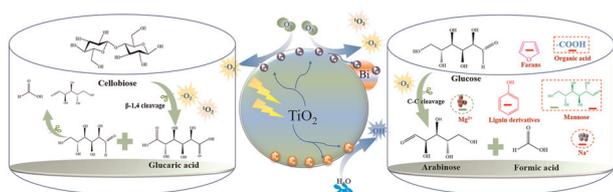
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Using green deep eutectic solvents for targeted regeneration to improve the cycle life of spent lithium iron phosphate batteries

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Cellobiose and glucose photorefining over non-noble Bi^0 -modified TiO_2 with oxygen vacancies: unraveling the effects of lignocellulosic derivatives and oxidation mechanism

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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*

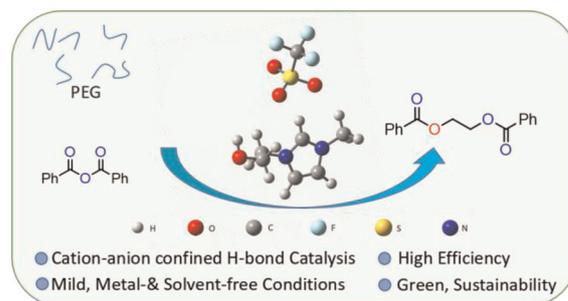


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A strategy of H-bond confinement catalysis for efficient degradation of polyethylene glycol into glycol diester over an OH-functionalized ionic liquid

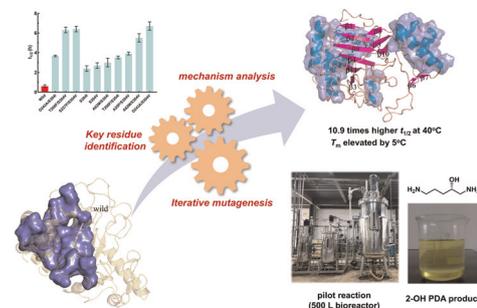
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Engineering the thermostability of lysine hydroxylase for scalable production of (2S)-hydroxy-1,5-pentanediamine from L-lysine

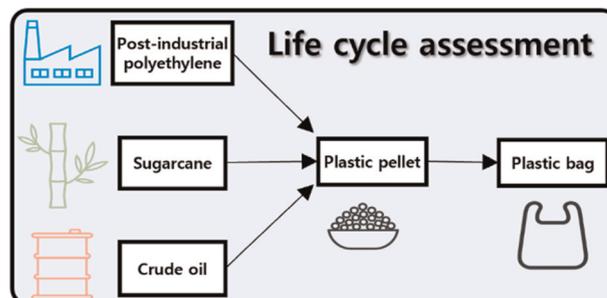
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Comparative life cycle assessment study of virgin polyethylene and bio-polyethylene, with recycled polyethylene from uncontaminated post-industrial film

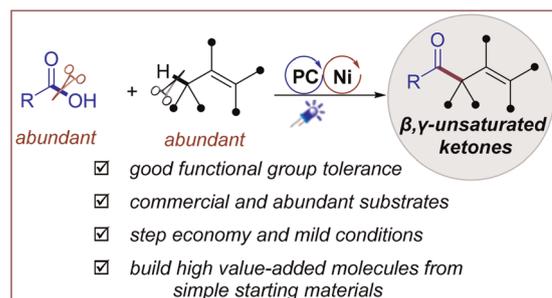
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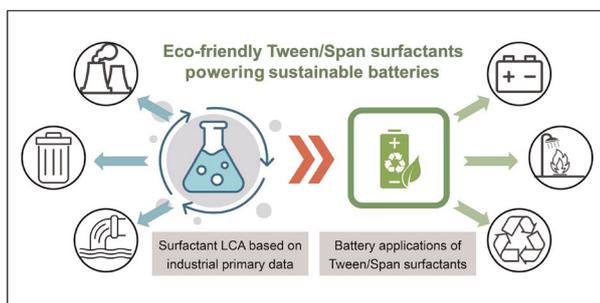
Direct allylic C(sp³)-H acylation of alkenes via metallaphotoredox catalysis using carboxylic acids

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*

