

Green Chemistry

Cutting-edge research for a greener sustainable future

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See Eva C. Thompson et al., pp. 5015–5026.

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Inside cover

See Kaige Wang et al., pp. 5027–5039.

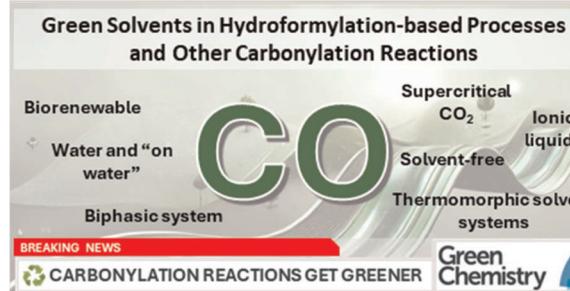
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Green solvents in hydroformylation-based processes and other carbonylation reactions

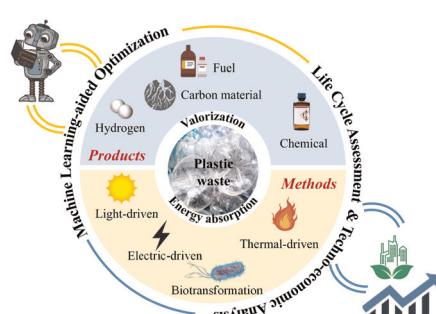
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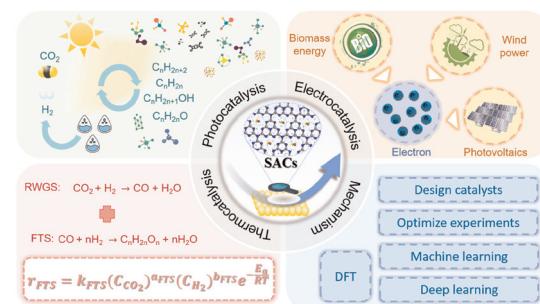
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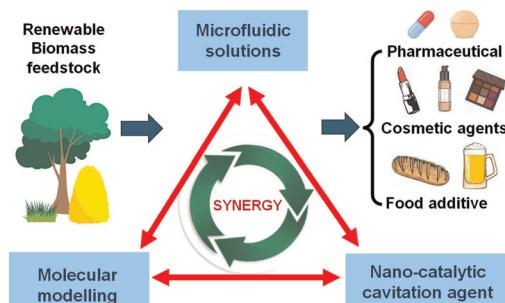
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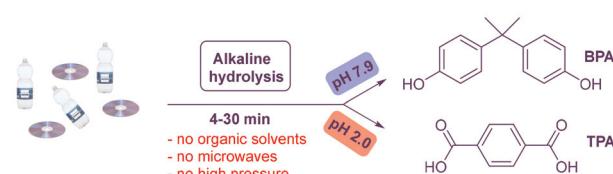


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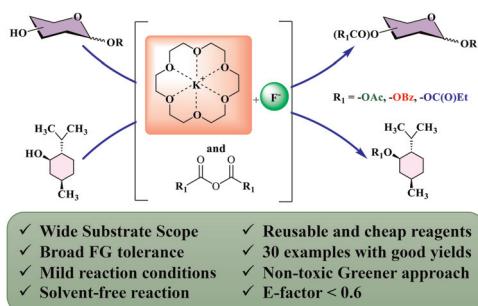
Catalytic alkaline hydrolysis of PET and BPA-PC waste in minutes at atmospheric pressure without microwaves or organic solvents

Anshul Jain and Stephen J. Connon*



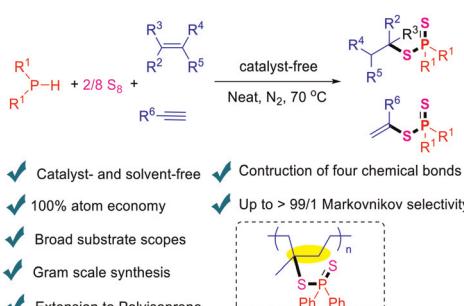
COMMUNICATIONS

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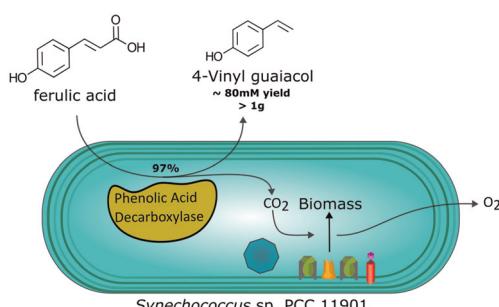
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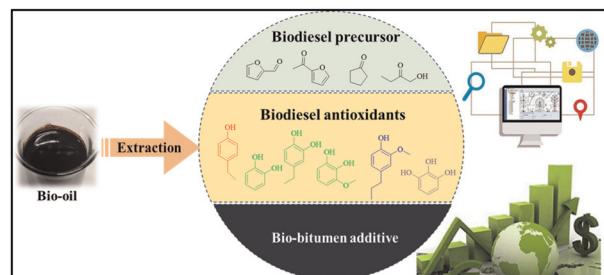


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Biochemicals to enable biorefining: a case study of polyphenol extraction from bio-oil for utilization as a biodiesel antioxidant

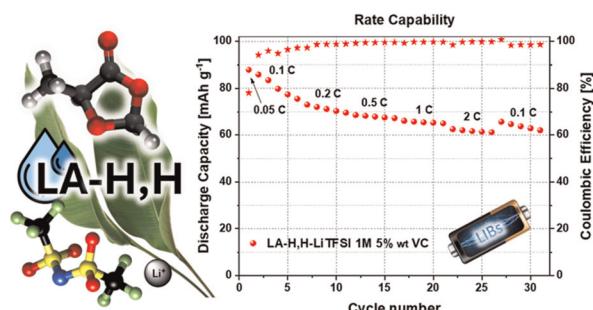
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A lactic acid dioxolane as a bio-based solvent for lithium-ion batteries: physicochemical and electrochemical investigations of lithium imide-based electrolytes

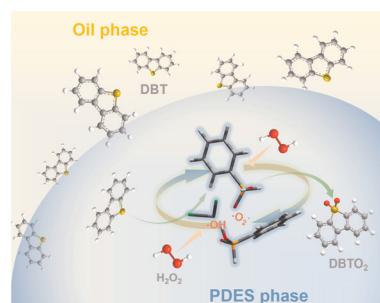
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Tuning the electronic structure of phosphonic acid-based deep eutectic solvents for synergistic catalytic oxidative desulfurization

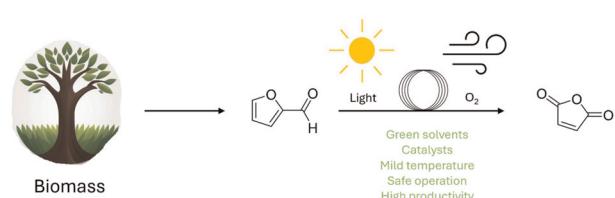
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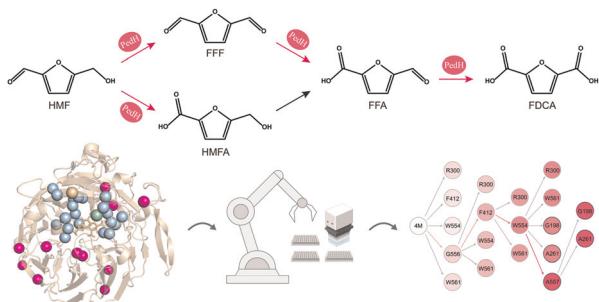
Efficient continuous flow oxidation of furfural to maleic anhydride using O₂ as a green oxidant

Jonas Mortier, Christian V. Stevens and Thomas S. A. Heugebaert*



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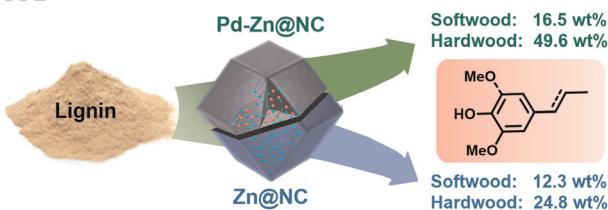
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Sequential single-enzyme oxidation of 5-hydroxymethylfurfural to 2,5-furandicarboxylic acid by an engineered lanthanide-dependent alcohol dehydrogenase

Ke Liu, Ling Jiang, Lun Wang, Qunfeng Zhang, Lirong Yang, Jianping Wu and Haoran Yu*

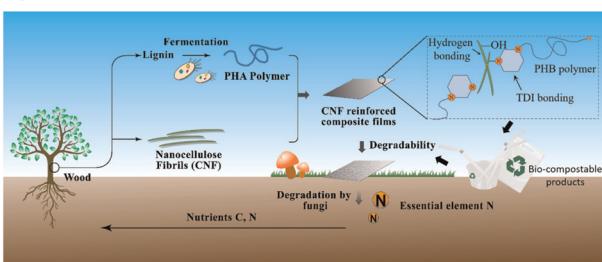
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Insights into the reductive catalytic deconstruction of lignin over ultralow-loading palladium–zinc catalysts derived from zinc imidazolate frameworks

Yi-Hui Lv, Qiang Wang,* Wen-Zheng Yin, Xue-Jie Gao, Ling-Ping Xiao* and Run-Cang Sun*

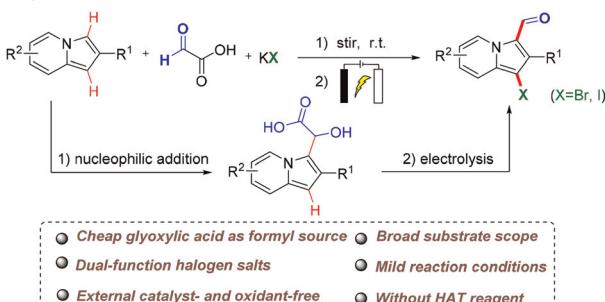
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Integrated design of multifunctional reinforced bioplastics (MReB) to synergistically enhance strength, degradability, and functionality

Jinghao Li, Wei Liu, Alex Chang, Zachariah Foudeh, Jiali Yu, Peiran Wei, Kainan Chen, Cheng Hu, Dhatt Puneet, Susie Y. Dai* and Joshua S. Yuan*

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Electrochemical difunctionalization of indolizines with glyoxylic acid and halide salts

Chenglong Feng, Xin Liu, Peipeng Zhang, Meichao Li* and Zhenlu Shen*

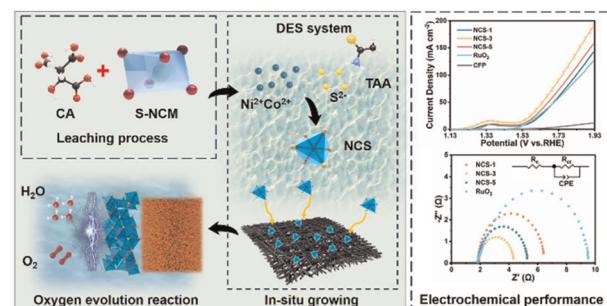


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Efficient metal recovery and electrocatalyst fabrication from spent lithium-ion batteries via green solvent extraction

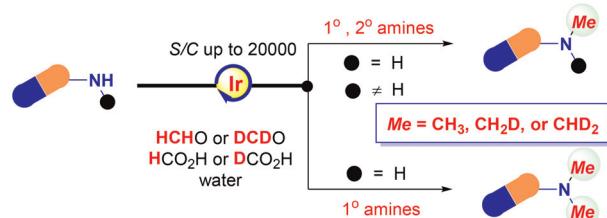
Mingfei Chen, Yaping Wang,* Yixin Zhou, Bin Guo, Li Wang and Jinsheng Liang*



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Iridium-catalyzed *N*-methylation of drug molecules

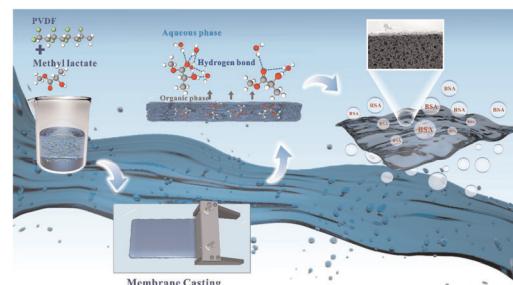
Yujie Zhang, Kangjia Zhang, Jiaxi Xu and Zhanhui Yang*



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Fabrication of PVDF ultrafiltration membranes with methyl lactate: enhancing performance through green solvent practices

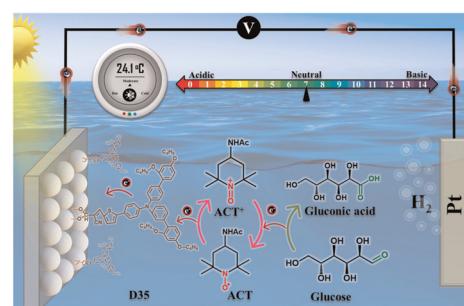
Manyao Zhu, Deyi Han, Shujuan Yang,* Yong Zhang* and Haichuan Zhang*



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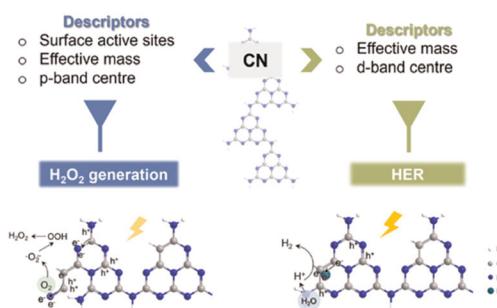
Selective oxidation of glucose to gluconic acid in aqueous media using dye-sensitized photoelectrochemical cells

Muhammad Zain Qamar, Hyeong Cheol Kang, Francis Kwaku Asiam, Raghisa Shahid, Muhammad Sadiq, Ashok Kumar Kaliamurthy and Jae-Joon Lee*



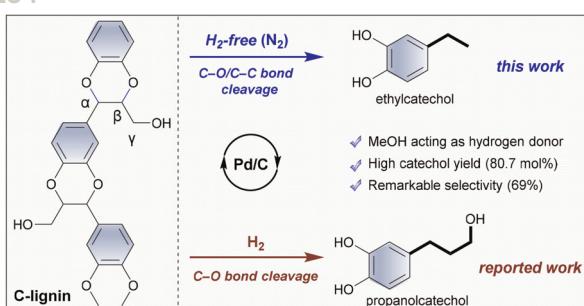
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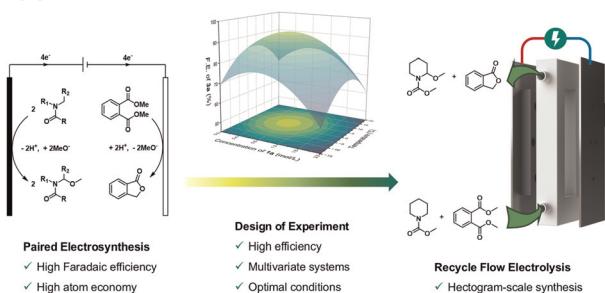
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**Selective catalytic depolymerisation of C-lignin into ethylcatechol using commercial Pd/C under hydrogen-free conditions**

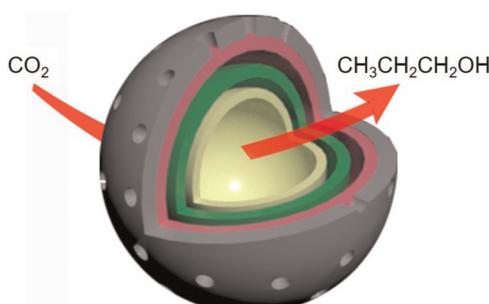
Xuening Li, Shuizhong Wang* and Guoyong Song

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**Pairing Shono-type electro-oxidation with the electro-reduction of dimethyl phthalate in a recycle flow reactor**

Zonghan Li, Chaoren Shen and Kaiwu Dong*

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Sha Wang, Jiangling Zhang,* Yingzhe Zhao, Jiajun Zhong, Zhongjun Chen, Yisen Yang, Buxing Han, Yongxin Cheng, Meiling Li and Qian Li

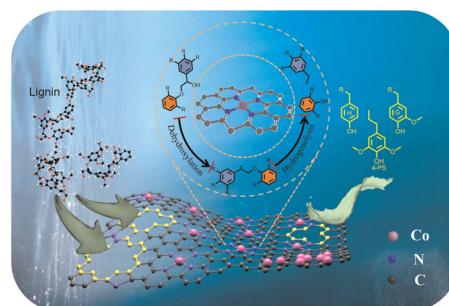


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Selective hydrogenolysis of lignin over hierarchical CoNC catalysts for the sustainable production of 4-propylsyringol

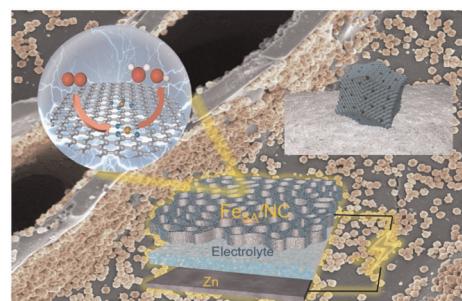
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Highly active Fe–N₄ sites confined in ordered carbon nanotube arrays as a self-supporting cathode catalyst for oxygen conversion

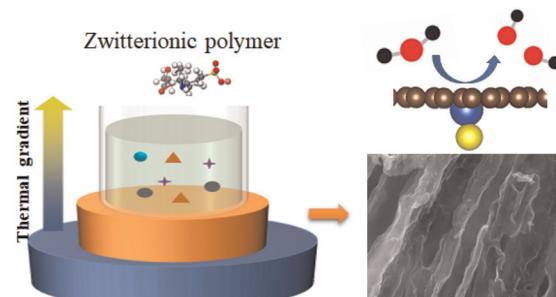
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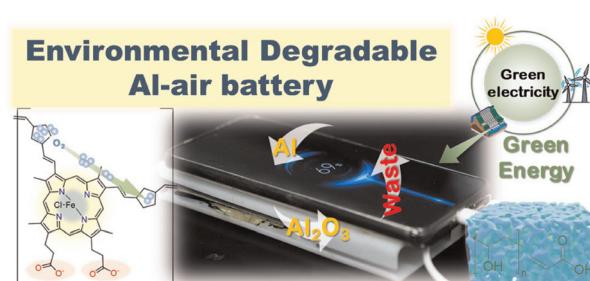
Congwei Wang,* Kun Zhang, Xiaoxiang Zhang, Jianmei Wang, Xinglin Luo, Gang Li and Kaiying Wang



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An environmentally degradable Al–air battery to realize future green energy–matter flow

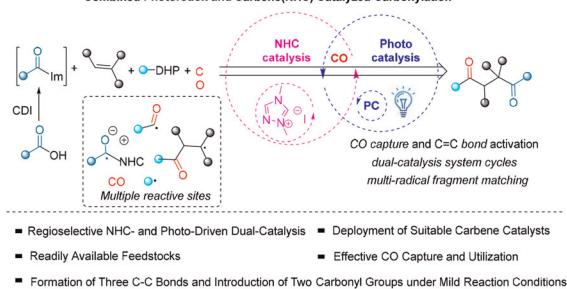
Jinrui Li, Yunhao Xu, Senlin Wei, Cheng Tong,* Minhua Shao, Cunpu Li* and Zidong Wei



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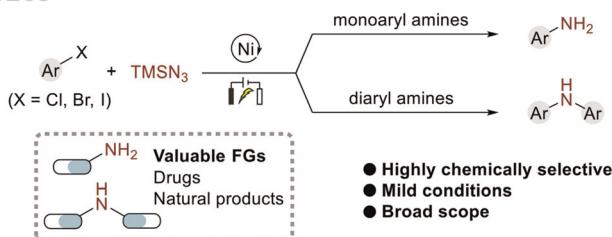
Combined Photoredox and Carbene(NHC) Catalyzed Carbonylation



N-Heterocyclic carbene-/photoredox-catalyzed regioselective carbonylation of alkenes

Mao-Lin Yang and Xiao-Feng Wu*

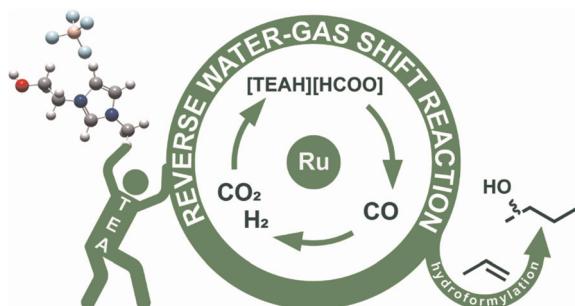
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Electrochemically enabled nickel-catalyzed controllable synthesis of monoaryl or diaryl amines from aryl halides and trimethylsilyl azides

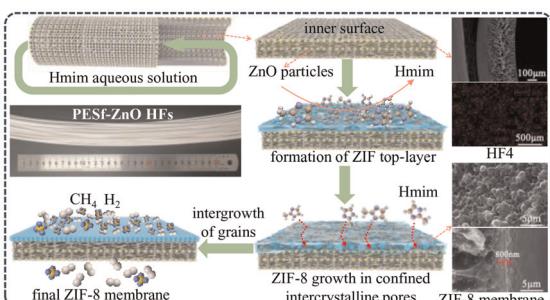
Jiawei Huang, Xiaoman Li, Xue Zhao, Yu Wei* and Liang Xu*

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A highly efficient ruthenium catalytic system for the direct synthesis of butanol from propylene and CO₂: a low-temperature reverse water-gas shift route

Chenfei Yao, Boyu Zhu, Peng Zheng and Xingbang Hu*

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Green *in situ* synthesis of ZIF-8 membranes on the inner-surface of PESf hollow fibers and application in hydrogen separation

Yifan Yang, Tengfei Yang, Lu Liu, Hanhan Chen, Wenxiu Zhang, Shaomin Liu and Xiaobin Wang*

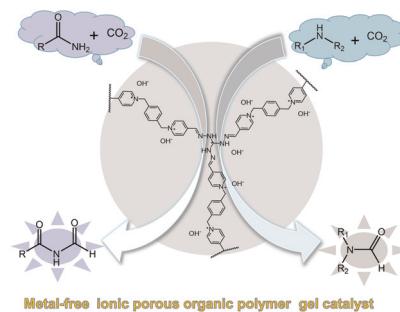


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An ionic porous organic polymer gel with hydroxide anions as an efficient catalyst for N-formylation of amines and amides with carbon dioxide

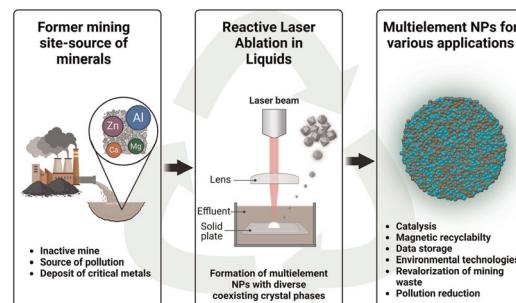
Jie Xu, Di Chen, Zhaobin Ye, Shasha Ma,
Yuanlong Wang and Jianyong Zhang*



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Reactive laser ablation in liquids as a promising approach for repurposing effluents from former mining sites

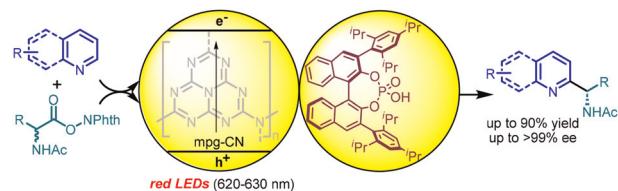
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Red-light-driven enantioselective Minisci-type addition to heteroarenes via recyclable semi-heterogeneous catalysis

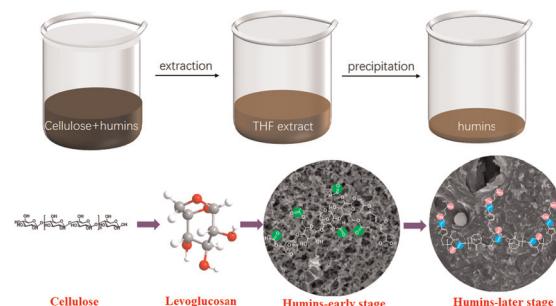
Yajun Sun, Geyang Song, Yonggang Yan, Tengfei Kang,*
Jianyang Dong, Gang Li and Dong Xue*



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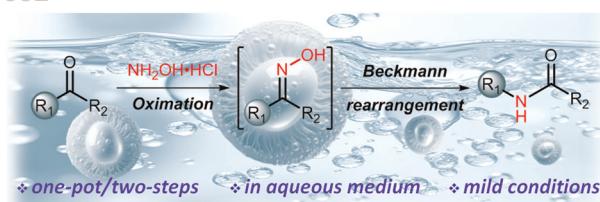
Evolution process of humins derived from cellulose by a humin extraction approach

Xianda Li, Zhongping Shao, Haozhe Shan and Li Liu*



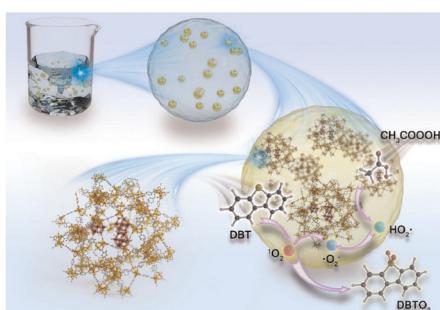
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**One-pot oximation-Beckmann rearrangement under mild, aqueous micellar conditions**

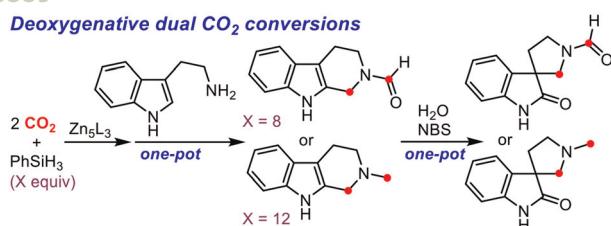
Maryam Nabi, Kirti Sharma, Raj S. Wandre and Amol B. Gade*

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**Design of a cage–core–chain structure catalyst for deep catalytic oxidative desulfurization with enhanced substrate enrichment**

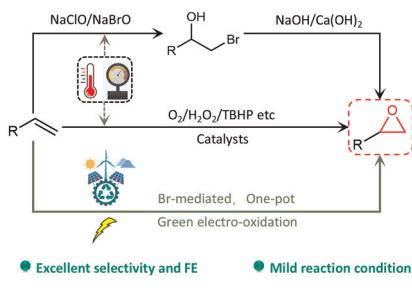
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Deoxygenative dual CO₂ conversions**Deoxygenative dual CO₂ conversions: methylenation and switchable N-formylation/N-methylation of tryptamines**

Kazuto Takaishi,* Hajime Morishita, Kosuke Iwaki and Tadashi Ema*

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**Highly efficient electro-epoxidation of olefins coupled with bromine recycling**

Haoqiong Zhu, Menglu Cai,* Xiaozhong Wang and Liyan Dai*



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Construction of a Cu³⁺–OH–Pt interface for enhancing glycerol electrooxidation coupled with hydrogen evolutionKaiwei Meng, Ziyi Fan, Huiming Wen, Yujie Hu,*
Wenjun Zhang* and Zupeng Chen*

CORRECTION

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Correction: Chitosan-based inks for 3D printing and bioprinting

Mohsen Taghizadeh, Ali Taghizadeh, Mohsen Khodadadi Yazdi, Payam Zarrintaj, Florian J. Stadler, Joshua D. Ramsey, Sajjad Habibzadeh, Somayeh Hosseini Rad, Ghasem Naderi, Mohammad Reza Saeb, Masoud Mozafari* and Ulrich S. Schubert*

