

# Green Chemistry

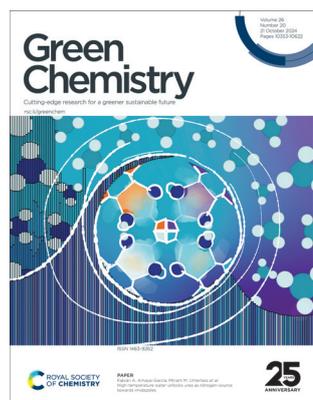
Cutting-edge research for a greener sustainable future

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## IN THIS ISSUE

ISSN 1463-9262 CODEN GRCHFJ 26(20) 10353–10622 (2024)



### Cover

See Fabián A. Amaya-García, Miriam M. Unterlass *et al.*, pp. 10411–10421.

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### Inside cover

See Wenyu Wu Klingler *et al.*, pp. 10422–10433.

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## EDITORIAL

10364

### Guidelines for the new Green Foundation box

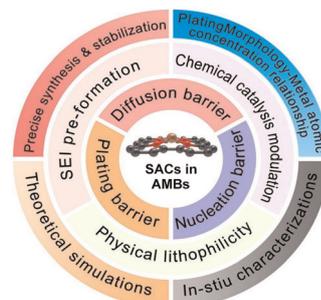


## CRITICAL REVIEW

10366

### Prospects of single atom catalysts for dendrite-free alkali metal batteries

Huihua Li, Jian Wang,\* Jing Zhang, Lujie Jia, Hongxu Qu, Qinghua Guan, Huang Zhang\* and Hongzhen Lin\*



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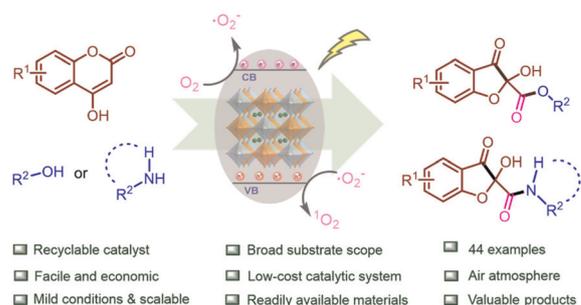
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## COMMUNICATIONS

10383

### Sustainable photocatalytic synthesis of 2-hydroxybenzofuran-3(2H)-ones using lead-free Cs<sub>2</sub>AgBiBr<sub>6</sub> nanocrystals

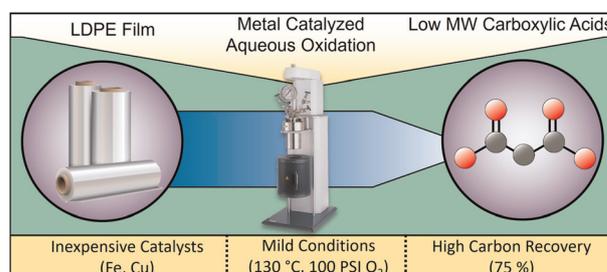
Haibo Zhu, Ting Zhong, Liu Yang, Yajing Shen,\*  
Qiangwen Fan,\* Zhanggao Le and Zongbo Xie\*



10390

### Mild aqueous metal catalyzed oxidative conversion of low-density polyethylene to low molecular weight aliphatic carboxylic acids

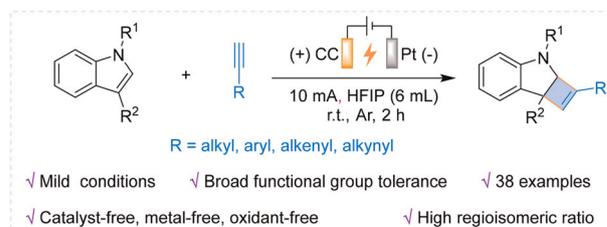
Oleg Davydovich, Hemant Choudhary,  
Daniella V. Martinez, Jay E. Salinas, Estevan J. Martinez,  
Ryan D. Davis, Nathan R. Bays, David P. Schafer and  
Michael S. Kent\*



10397

### Electrochemically enabled dearomative [2 + 2] cycloadditions of indoles with alkynes to access cyclobutene-fused indolines

Jingjing Zi, Huiling Tang, Dongyin Wang, Meng Li,  
Yuxiang Zhou, Sihui Lv, Deqiang Liang\* and Lou Shi\*



10404

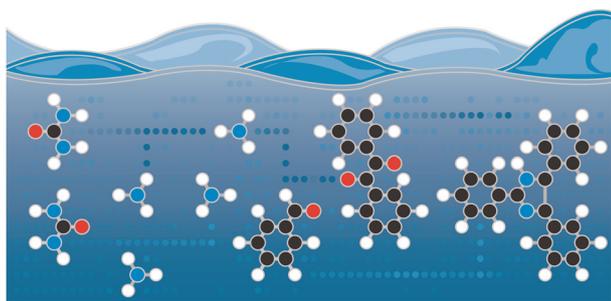
### Biocatalysis as a versatile tool for macrolactonization: comparative evaluation of catalytic and stoichiometric approaches

Javier Guerrero-Morales and Shawn K. Collins\*



## PAPERS

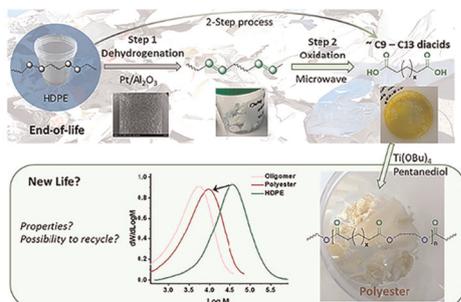
10411



### High-temperature water unlocks urea as nitrogen-source towards imidazoles

Fabián Amaya-García,\* Lena Schittenhelm and Miriam M. Unterlass\*

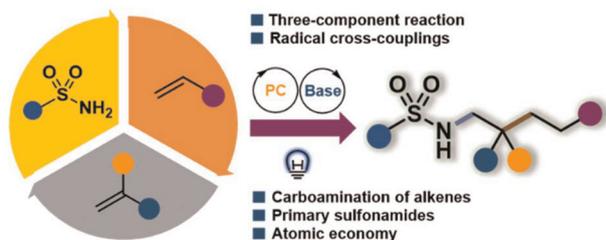
10422



### A facile methodology for side- and upcycling of HDPE waste *via* partial creation of unsaturated double bonds

Wenyu Wu Klingler,\* Lucie Perret, Patrick Rupper, Sandro Lehner, Xiaoyu Zhou, Henrik Eliasson, Rico Muff, Manfred Heuberger and Sabyasachi Gan

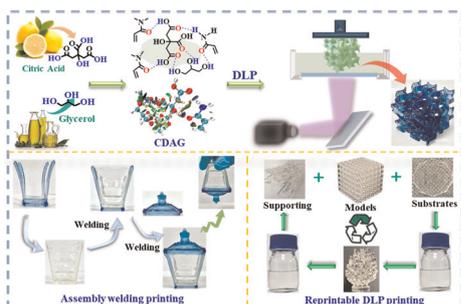
10434



### Catalytic three-component carboamination of unactivated alkenes with primary sulfonamides

Ying Zhang, Kai-Dian Li, Chang-Quan Zhou, Zhi-Xi Xing and Huan-Ming Huang\*

10441



### High-biobased polymerizable deep eutectic solvents for sustainable DLP printing: assembly welding and reprintable printing

Meiting Liu, Guixin Zhang, Yun Hu, Caiying Bo, Yan Dai, Lihong Hu,\* Guoqiang Zhu\* and Yonghong Zhou

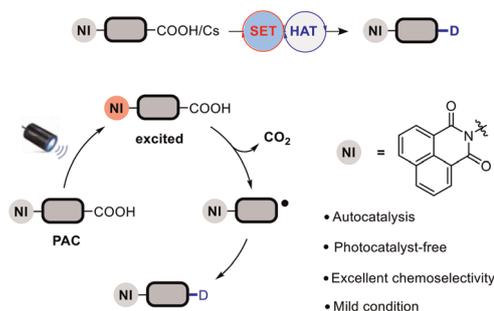


## PAPERS

10456

**Catalyst-free decarboxylative deuteration using tailored photoredox-active carboxylic acids**

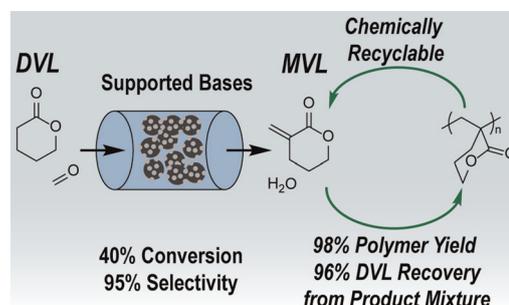
Shuai Liu, Hongze Liao,\* Bin Chen, Tengyu Guo, Zhizhen Zhang\* and Houwen Lin\*



10463

**Synthesis of  $\alpha$ -methylene- $\delta$ -valerolactone and its selective polymerization from a product mixture for concurrent separation and polymer production**

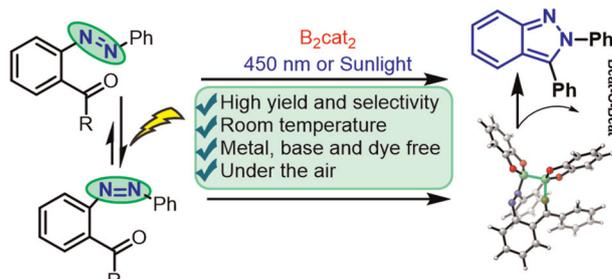
Alexander A. Khechfe, Francesca D. Eckstrom, Eswara Rao Chokkapu, Lucas A. Baston, Bowei Liu, Eugene Y.-X. Chen\* and Yuriy Román-Leshkov\*



10473

**Direct deoxygenative C–N coupling to construct indazole under visible light**

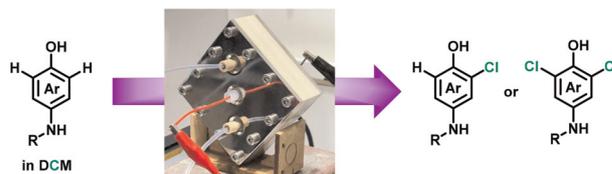
Xinluo Song, Lingfeng Yin, Subin Hao, Yu Wang, Yanqi Chen, Cheng Ma, Ming-De Li\* and Li Dang\*



10479

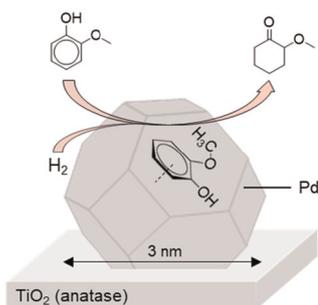
**Scalable catalyst free electrochemical chlorination of aminophenol derivatives enabled by a quasi-divided cell approach**

Bhanwar K. Malviya, Gabriele Laudadio, C. Oliver Kappe and David Cantillo\*



## PAPERS

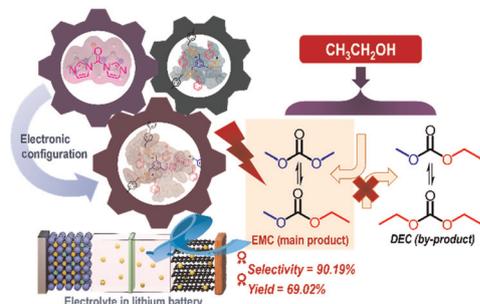
10486



### Selective hydrogenation of guaiacol to 2-methoxycyclohexanone over supported Pd catalysts

Yota Taniwaki, Yoshinao Nakagawa,\* Mizuho Yabushita and Keiichi Tomishige\*

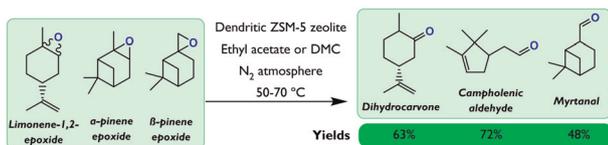
10500



### The role of interactions between the cationic backbone and basic anions in green and ultra-selective catalytic synthesis of ethyl methyl carbonate in tunable ionized frameworks

Jie Chen, Jingjun Xie, Xiaoyan Chen, Rong Dong, Xue-Hui Ge\* and Ting Qiu\*

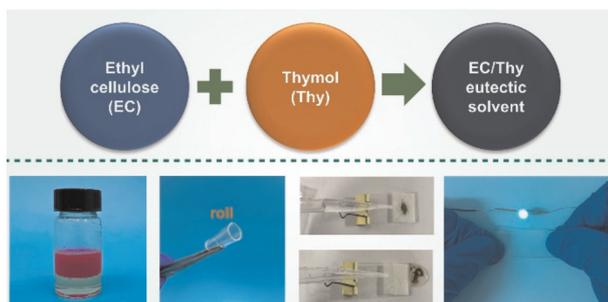
10512



### Dendritic ZSM-5 zeolites as highly active catalysts for the valorization of monoterpene epoxides

Luis A. Gallego-Villada,\* Jennifer Cueto, María del Mar Alonso-Doncel, Päivi Mäki-Arvela, Edwin A. Alarcón, David P. Serrano\* and Dmitry Yu. Murzin\*

10529



### Innovative green synthesis of hydrophobic covalent networks using ethyl cellulose/thymol eutectic systems

Ren'ai Li, Chen Su, Mengqing Li and Yunfeng Cao\*

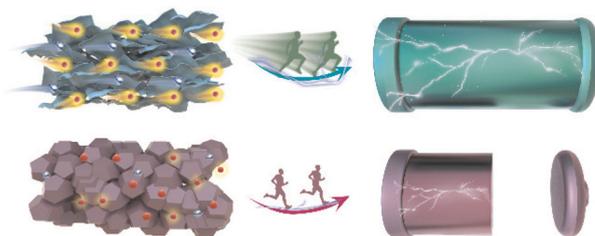


## PAPERS

10538

### Fast-charging 2D phosphate cathodes *via* green exfoliation: low steric hindrance and efficient Na<sup>+</sup> transport

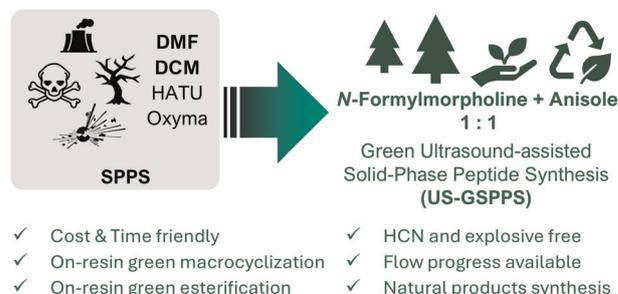
Xiao-Tong Wang, Kai Li, Jun-Ming Cao, Zhen-Yi Gu,\*  
Xin-Xin Zhao, Han-Hao Liu, Jin-Zhi Guo,  
Zhong-Hui Sun, Shuo-Hang Zheng, Hao-Jie Liang and  
Xing-Long Wu\*



10549

### Green solvent mixture for ultrasound-assisted solid-phase peptide synthesis: a fast and versatile method and its applications in flow and natural product synthesis

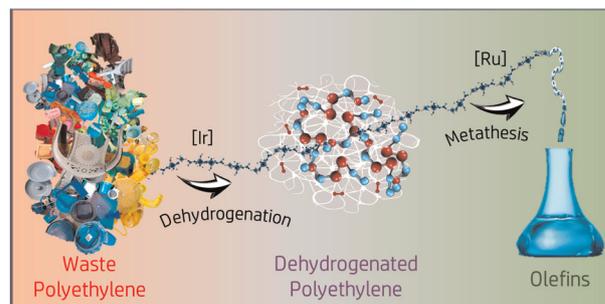
Jingyuan Liao, Renrong Zhang, Xuelei Jia,  
Meiling Wang, Chaoyi Li, Juntao Wang, Renjin Tang,  
Junrong Huang,\* Hengzhi You\* and Fen-Er Chen\*



10558

### Depolymerization of waste polyethylene to linear alkenes *via* sequential dehydrogenation and metathesis

Kishor V. Khopade, Nikhita S. Rajput,  
Raghavendrakumar Rangappa, Nagaraju Barsu\* and  
Samir H. Chikkali\*



10567

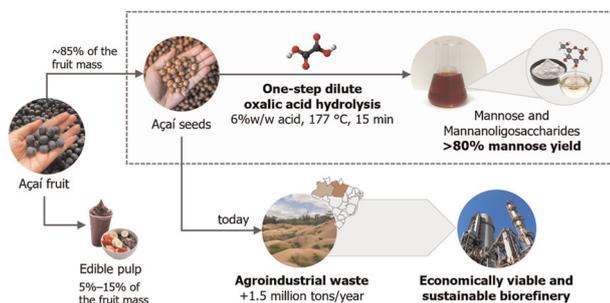
### Practical electrochemical hydrogenation of nitriles at the nickel foam cathode

Rok Narobe, Marcel Nicolas Perner, María de Jesús Gálvez-Vázquez, Conrad Kuhwald, Martin Klein,  
Peter Broekmann, Sina Rösler, Bertram Cezanne and  
Siegfried R. Waldvogel\*



## PAPERS

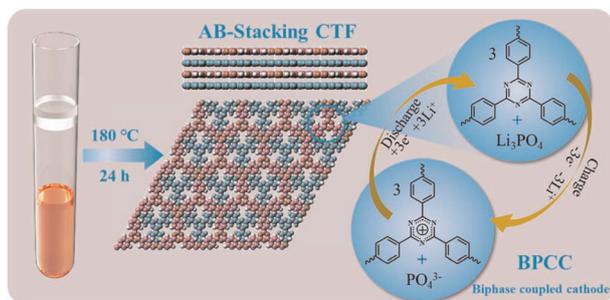
10575



### From açai (*Euterpe oleracea* Mart.) waste to mannoside and mannanoligosaccharides: a one-step process for recalcitrant mannan depolymerization using dilute oxalic acid

Fernanda Thimoteo Azevedo Jorge, Ingrid Santos Miguez, George Victor Brigagão and Ayla Sant'Ana da Silva\*

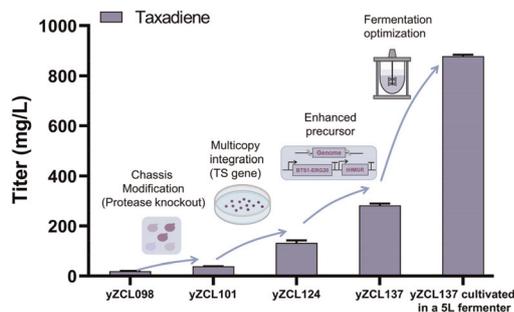
10593



### A biphasic coupled cathode enables all-organic rocking-chair lithium ion batteries based on crystalline AB-stacked covalent triazine-based frameworks

Xiaorong Yan, Guoqing Zhao, Chuanguang Wu, Yujie Dai, Jiakui Xiong, Xinyu Wang, Haiping Yu, Zhihui Wang, Rui Li, Jingru Liu, Mingjun Hu\* and Jun Yang\*

10604



### Improving the expression of taxadiene synthase to enhance the titer of taxadiene in *Saccharomyces cerevisiae*

Chenglong Zhang, Jia Wang, Yi Shi, Nan Wu, Xia Li, Ying Wang, Bingzhi Li, Wenhai Xiao,\* Mingdong Yao\* and Yingjin Yuan

## EXPRESSION OF CONCERN

10617

### Expression of concern: Preparation of polydopamine sulfamic acid-functionalized magnetic $\text{Fe}_3\text{O}_4$ nanoparticles with a core/shell nanostructure as heterogeneous and recyclable nanocatalysts for the acetylation of alcohols, phenols, amines and thiols under solvent-free conditions

Hojat Veisi,\* Sepideh Taheri and Saba Hemmati



## CORRECTION

10618

**Correction: Catalyst-free decarboxylative deuteration using tailored photoredox-active carboxylic acids**

Shuai Liu, Hongze Liao,\* Bin Chen, Tengyu Guo, Zhizhen Zhang\* and Houwen Lin\*

