

# Green Chemistry

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## IN THIS ISSUE

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**Cover**  
See Ning Yan *et al.*,  
pp. 5715–5727.

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2025, **27**, 5715.



**Inside cover**  
See Carlos Marquez and  
Sustainable Polymer  
Technologies (SPOT) Team,  
pp. 5709–5714.

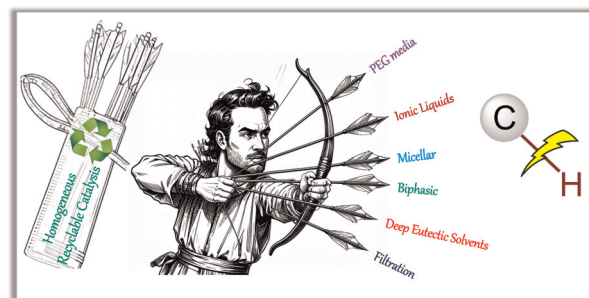
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*Green Chem.*,  
2025, **27**, 5709.

## TUTORIAL REVIEW

5667

### Green innovations in C–H bond functionalisation: exploring homogeneous recyclable catalytic systems

Dewal S. Deshmukh, Sanjay Singh,  
Kirtikumar C. Badgajar, Vivek T. Humne,  
Gajanan V. Korpe\* and Bhalchandra M. Bhanage\*

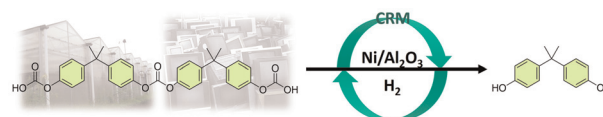


## COMMUNICATION

5709

### Monomer recycling of virgin polycarbonate (PC), end-of-life PC and PC-ABS blends by Ni-catalyzed reductive depolymerization

Carlos Marquez,\* Annelore Aerts, Dambarudhar Parida,  
Illian Glassee, Harisekhar Mitta, Lingfeng Li,  
Kevin M. Van Geem, Karolien Vanbroekhoven,  
Elias Feghali\* and Kathy Elst



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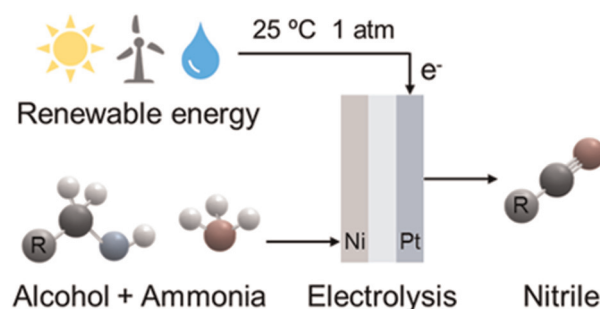
Fundamental questions  
Elemental answers

## PAPERS

5715

**Electrosynthesis of nitriles from primary alcohols and ammonia on Ni catalysts**

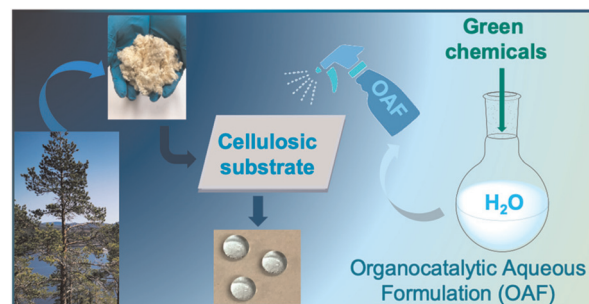
Yiyang Xiao, Chia Wei Lim, Linfeng Gao and Ning Yan\*



5728

**Organocatalytic aqueous formulations: green organocatalytic hydrophobization of heterogeneous polysaccharide-based materials in water through "on-water" mechanisms**

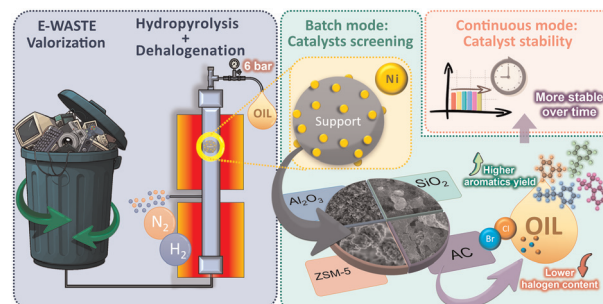
Rana Alimohammadzadeh,\* Dylan Ferreira, Zine Eddine Hamdouche, Tanel Möistlik and Armando Córdoba\*



5736

**Assessing supported nickel catalysts for the upcycling of real WEEE plastics through low-pressure hydrolysis and dehalogenation**

Lidia Amodio, Jennifer Cueto, Julio López, Héctor Hernando, Patricia Pizarro and David P. Serrano\*



5753

**Closed-loop chemical recycling of polyethylene furan-2,5-dicarboxylate (PEF) under microwave-assisted heating**

Sean Najmi, Dylan Huang, Andrew Duncan, Daniel Slanac, Keith Hutchenson, James Hughes, Raja Poladi and Dionisios G. Vlachos\*



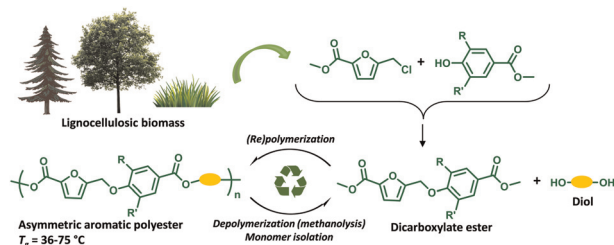
5764



### Electrocatalytic linear coupling of alkenes via radical anion under mild conditions

Jingao Xiao, Feng Long, Sheng Yi, Haifang Luo, Changqun Cai and Hang Gong\*

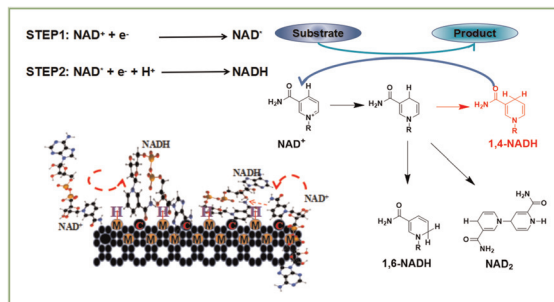
5770



### Closed-loop chemically recyclable aromatic polyesters based on asymmetric dicarboxylates obtainable from lignocellulose

Nitin G. Valsange, Niklas Warlin, Smita V. Mankar, Nicola Rehnberg, Baozhong Zhang\* and Patric Jannasch\*

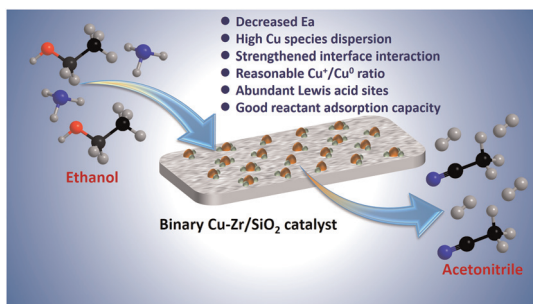
5782



### Metal-carbon electrode optimization for efficient electrochemical regeneration of 1,4-NADH: a new approach for sustainable biochemical synthesis

Yang Zhou, LingLong Huang, Yuan Tao, ChangQing Luo, JianMiao Xu,\* ZhiQiang Liu and YuGuo Zheng

5795



### Selective production of acetonitrile via dehydroamination of ethanol over a stable Cu-Zr/meso SiO<sub>2</sub> catalyst

Xiaomin Zhang, Mo Zhou, Yujia Zhao, Jifeng Pang, Pengfei Wu,\* Zhen Guo\* and Mingyuan Zheng\*

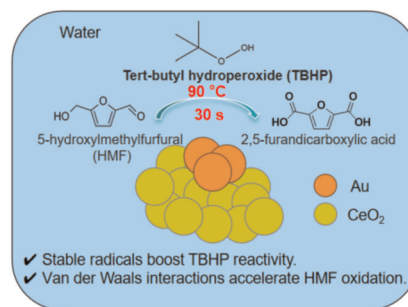


## PAPERS

5810

### *tert*-Butyl hydroperoxide-mediated rapid 30-second oxidation of 5-hydroxymethylfurfural to 2,5-furandicarboxylic acid

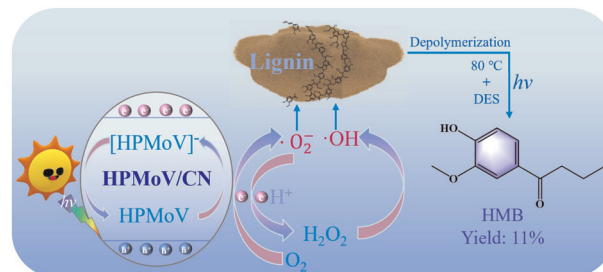
Jian Liu and Ximing Zhang\*



5819

### Photo-promoted production of a new monophenolic compound from larch lignin with polyoxometalates supported on *g*-C<sub>3</sub>N<sub>4</sub> under ambient conditions

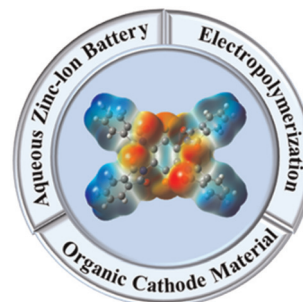
He Wan, Yang Liu, Chunhui Yu, Kuiyuan Cao, Yongwei Han, Zhong Sun, Junyou Shi and Xixin Duan\*



5832

### Towards ultra-stable aqueous zinc-ion batteries via electrochemical polymerization of phthalimido-anchored benzoquinone

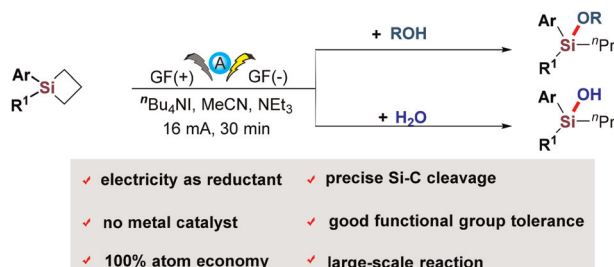
Dan Wang,\* Yu-Xuan Bai, Zi-Xiang Zhou, Wei Cao, Yang-Min Ma and Chao Wang\*



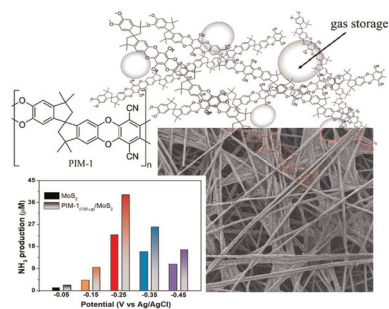
5844

### Electrochemically driven silicon-carbon bond cleavage of silacyclobutanes: a transition metal-free approach

Yuanmeng Li, Jianshu Yue, Yinghui Shao, Yanni Yue,\* Hongping Deng, Xiaoli Bu, Mengtao Ma\* and Fei Xue\*



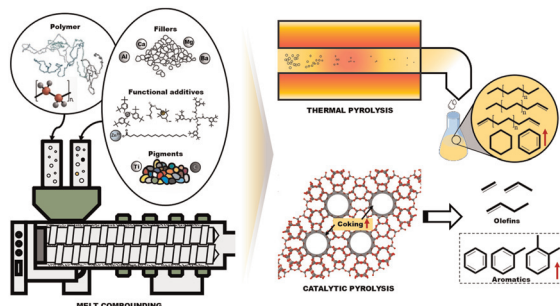
5851



### Enhancing the electroreduction of $N_2$ and/or $O_2$ on $MoS_2$ using a nanoparticulate intrinsically microporous polymer (PIM-1)

Caio V. S. Almeida, Lara K. Ribeiro, Lucia H. Mascaro,\*  
Mariolino Carta, Neil B. McKeown and Frank Marken\*

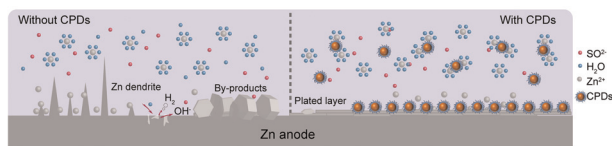
5861



### Influence of functional additives, fillers, and pigments on thermal and catalytic pyrolysis of polyethylene for waste plastic upcycling

Harish Radhakrishnan, Abdulrahman  
A. B. A. Mohammed, Isabel Coffman and Xianglan Bai\*

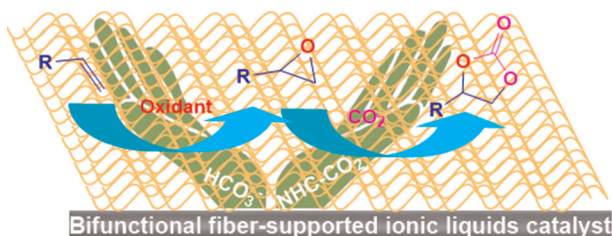
5883



### Carbonized polymer dots as electrolyte additives for suppressing Zn dendrite growth, corrosion, and the HER in Zn-ion batteries

Xiao-Yan Shen, Guo-Duo Yang, Xin-Yao Huang,  
Yan-Fei Li, Zhuo Wang, Tong Wang, Ru-Yi Liu,  
Yi-Han Song, Ming-Xiao Deng\* and Hai-Zhu Sun\*

5892



### Tandem reaction of olefins and $CO_2$ to cyclic carbonates over polyetheretherketone fiber-supported ionic liquids *via* relay catalysis in a spinning basket reactor

Xian-Lei Shi,\* Ruifeng Jing, Qianqian Hu,  
Honghui Gong, Jingyi Wang, Gang Xu, Bowen Liu\* and  
Ao Zhang

