

# Green Chemistry

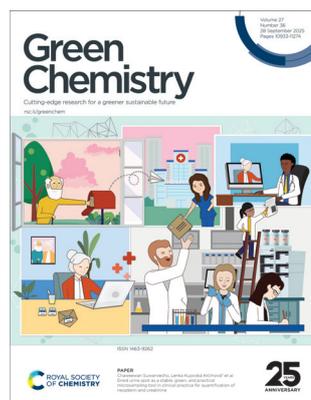
Cutting-edge research for a greener sustainable future

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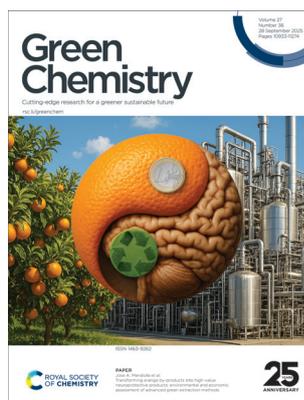


### Cover

See Chaweewan Suwanvecho, Lenka Kujovská Krčmová et al., pp. 11007–11020.

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We kindly thank Chaweewan Suwanvecho, MSc. for the preparation of our excellent front cover image.



### Inside cover

See Jose A. Mendiola et al., pp. 11021–11035.

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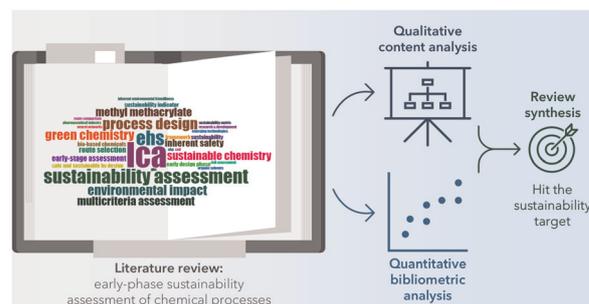
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## CRITICAL REVIEW

10944

### From qualitative analysis to quantitative insights: a systematic review of early phase sustainability assessments of chemical processes

Katharina Waniek, C. Oliver Kappe\* and Rupert J. Baumgartner\*

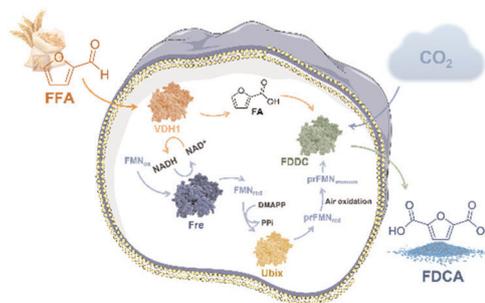


## COMMUNICATIONS

10969

### NAD(H) self-recycling whole-cell biocatalysis for the production of furoic acid and 2,5-furandicarboxylic acid from furfural via CO<sub>2</sub> fixation

Mingzhe Ma and Yajie Wang\*



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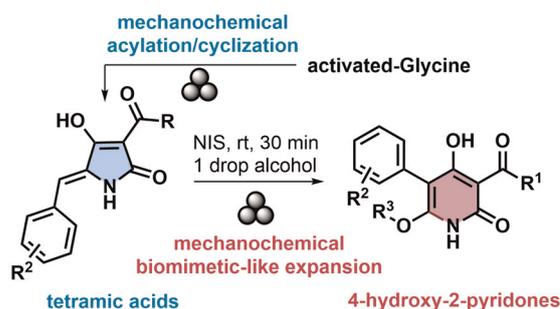
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## COMMUNICATIONS

10974

**Mechanochemical synthesis of tetramic acids and their biomimetic ring expansion to 4-hydroxy-2-pyridones**

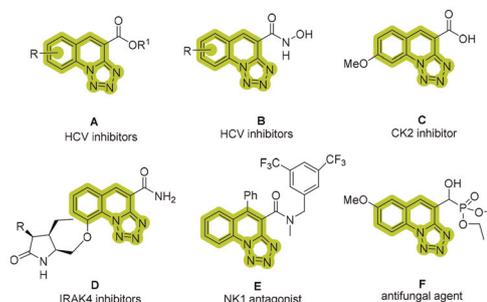
Kalliopi Mazaraki, Aimilia Eirini Tsirozidou, Basil Kakarikas and Alexandros L. Zografos\*



10980

**A PASE synthesis of tetrazoloquinolines and its applications in the syntheses of bioactive compounds**

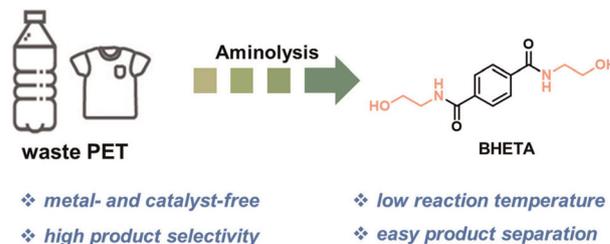
Xiaofeng Zhang,\* Sashirekha Nallapati, Shea Johnson, Xian Chen and Jongwon Lim



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**Solvent-promoted catalyst-free aminolytic upcycling of waste polyethylene terephthalate under low-temperature conditions**

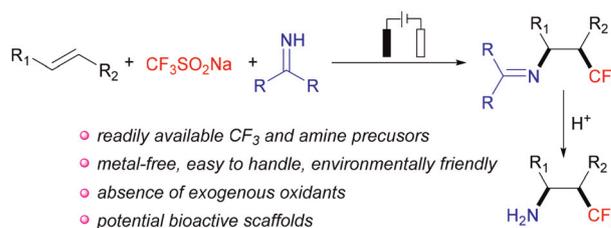
Zan Yang,\* Meihua Chen, Anqi Huang, Jundong Xu, Congshan Zhou and Yongbing Yuan\*



10994

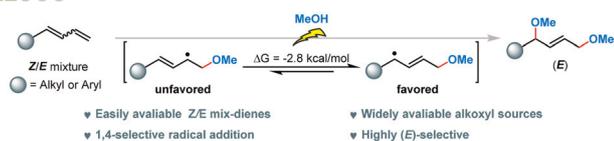
**Electrochemical intermolecular trifluoromethylimation of alkenes**

Meiqun Lu,\* Kailun Chen and Hu Cai\*



## COMMUNICATIONS

11000

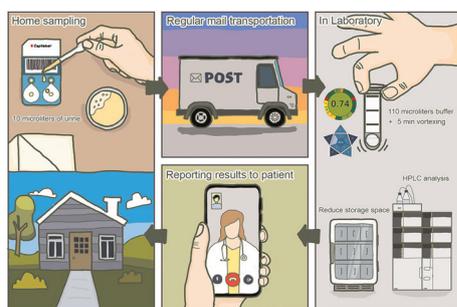


### Electrochemical radical 1,4-dialkoxylation of 1,3-dienes to access (E)-1,4-diether alkenes

Chenlei Ji, Yuhe Cheng, Zhiwei Jiang and Yang'en You\*

## PAPERS

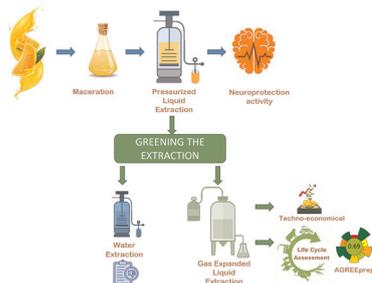
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### Dried urine spot as a stable, green, and practical microsampling tool in clinical practice for quantification of neopterin and creatinine

Chaweewan Suwanvecho, Lea Vyleťalová, Nikola Přívratská, Pakanan Laolertworakul, Dorota Turoňová, Milan Vošmik, Lenka Kujovská Krčmová\* and Frantisek Svec

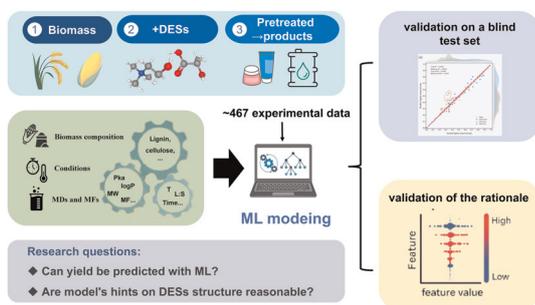
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### Transforming orange by-products into high-value neuroprotective products: environmental and economic assessment of advanced green extraction methods

Brenda L. S. Porto, Berenice Acevedo-García, Ayla Elmi Kashtiban, Tulio Miranda Sepulveda, Miguel Herrero, Alejandro Cifuentes, Jose A. Mendiola\* and Elena Ibáñez

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### Predicting lignin removal efficiency in deep eutectic solvent-based biomass fractionation: an explainable machine learning approach

Zijing Zhong, Babbiker Mohammed Taher Gorish, Yue Bai, Waha Ismail Yahia Abdelmula, Wenqian Dang and Daochen Zhu\*

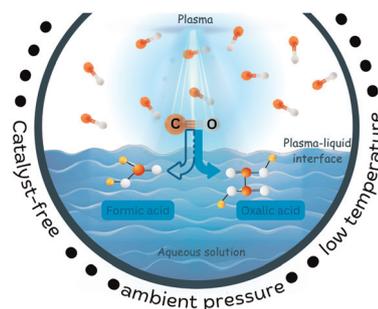


## PAPERS

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### Non-thermal atmospheric pressure plasma–liquid synthesis of organic acids in aqueous solution from carbon monoxide

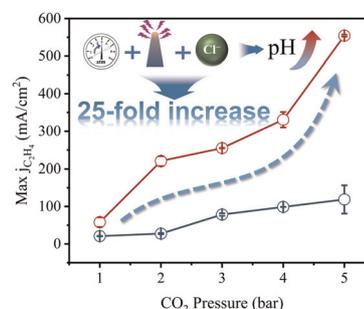
Alcina Johnson Sudagar,\* Piper Drebes and Elijah Thimsen



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### Breaking the C–C coupling barrier in pressurized CO<sub>2</sub>RR: local alkalinity control against buffering of CO<sub>2</sub> species at industrial current densities

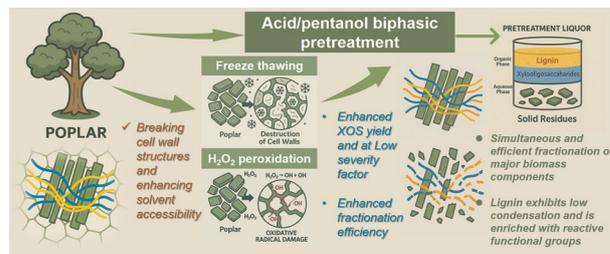
Shilei Zhang, Hang Wang, Yang Wang, Min Zhang, Weimin Wang, Liang Zhang, Jun Li, Xun Zhu, Qian Fu\* and Qiang Liao\*



11075

### Hydrogen peroxide pre-oxidation breaks down the recalcitrance of poplar biomass during acid/pentanol biphasic fractionation

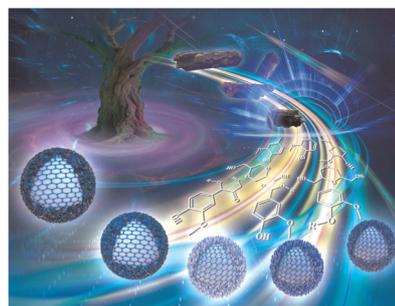
Hong Liao, Yimeng Wang, Huayou Chen, Fubao Sun and Junhua Zhang\*



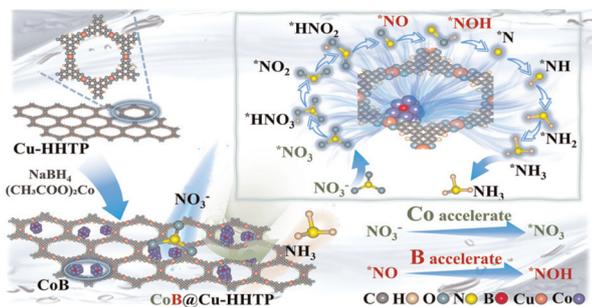
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### Structural and functional divergence of lignin-derived carbon dots and their nucleation pathways under varying alcohol-solvothermal treatments

Wenhao Hu, Siyu Zhao, Chihe Sun,\* Xueping Song, Meysam Madadi, Elahe Chiani, Abdolreza Samimi, Alireza Ashori and Fubao Sun\*



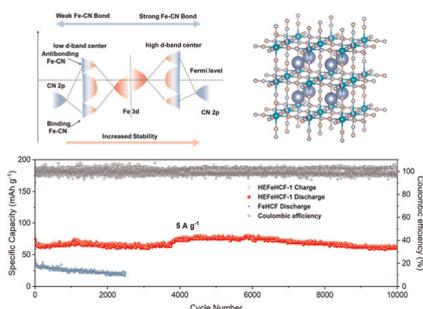
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### Integration of B-doped Co nanoclusters within Cu metal–organic frameworks for highly efficient electrocatalytic nitrate reduction

Ran Li, Hui Li, Yuxin Liu, Jing Luo, Qi Sui, Keke Wang,\* Jiarui Xia\* and Yi Jiang\*

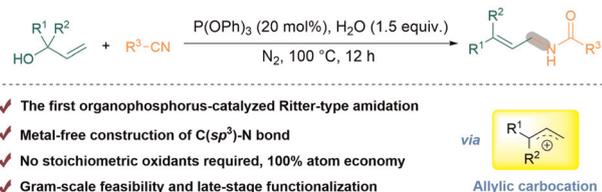
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### D-band center modulation of Prussian blue analogues through a high-entropy strategy for aqueous potassium-ion batteries

Fuping Min, Qi Zhang,\* Usman Ali, Maoyu Sun, Fayin Liu, Yueqi Xu, Lu Li,\* Chungang Wang and Bingqiu Liu\*

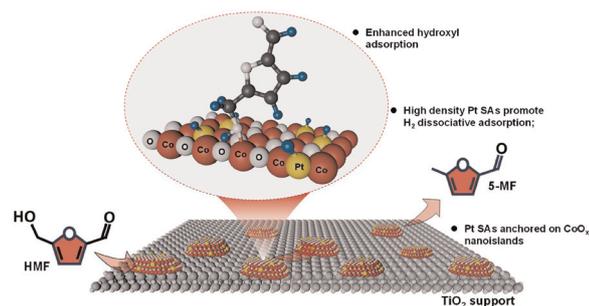
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### Metal-free triphenyl phosphite-catalyzed Ritter-type amidation of allylic alcohols

Longzhi Zhu,\* Furong Guo, Weiwei Luo, Shuangjiao Xie, Tingyuan Zhu, Zihao Liao, Biquan Xiong,\* Yu Liu, Ke-Wen Tang and Renhua Qiu\*

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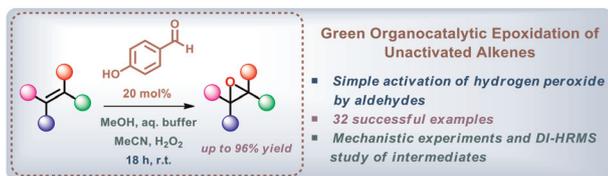
### Pt single atoms anchored on CoO<sub>x</sub> nanoislands for efficient biomass-derived 5-methylfurfural production

Xiongxin Liang, Zidong Huang, Xin Luo, Xu Yang,\* Dai Dang, Xu Li\* and Hongliang Peng





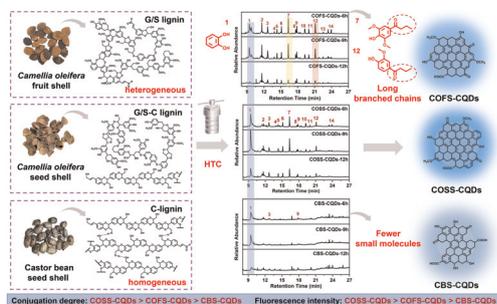
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### Green epoxidation of unactivated alkenes *via* the catalytic activation of hydrogen peroxide by 4-hydroxybenzaldehyde

Efthymios T. Poursaitidis, Christiana Mantzourani, Ierasia Triandafillidi, Maroula G. Kokotou and Christoforos G. Kokotos\*

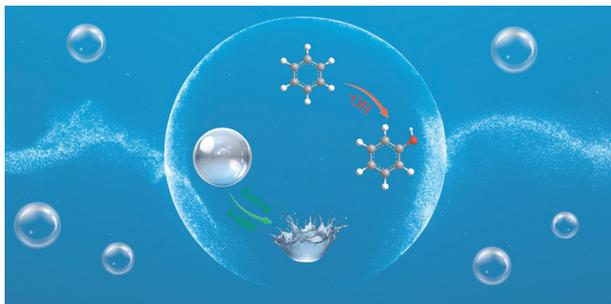
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### The formation mechanism and properties of carbon quantum dots prepared from guaiacyl/syringyl lignin and catechyl lignin

Xingmei Tang, Wenhua Gao,\* Sheng Duan, Jing Li, Jinsong Zeng, Jinpeng Li, Daxian Cao, Bin Wang, Jun Xu and Kefu Chen

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### Catalyst-free one-step oxidation of benzene to phenol using nanobubbles

Rui Yin, Qihang Zhang, Weiqing Yang, Xinlan Hou, Mingyi Xie and Yuxi Tian\*

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### Electroreductive hydrodimerization of allylbenzenes and vinylarenes enables the diversified synthesis of 1,4-diarylbutanes

Wei Zhang,\* Shilu Zhang, Wan-Jian Fan, Shu Chen, Mei Xiong and Lei Chen\*

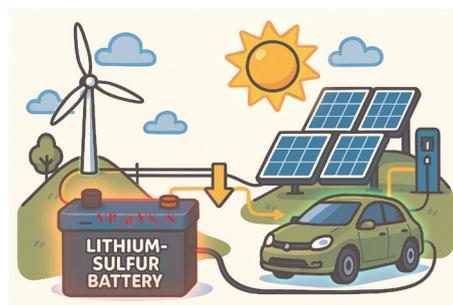


## PAPERS

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### An *in situ* phosphorization constructed $VP_2@VS_2$ nanoflower heterostructure with a modulated d-band center of V for efficient polysulfide adsorption and conversion in lithium–sulfur batteries

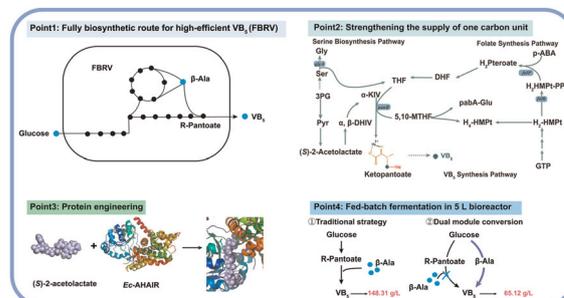
Zhidong Ye, Yaxiong He, Huasheng Gao, Heming Hu, Tao Chen and Qi Jiang\*



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### Enhancing vitamin B<sub>5</sub> biosynthesis by multimodule optimization and protein engineering

Bo Zhang, Yuning Xiao, Yi Zhu, Chaoze Liu, Lidan Zhu, Junping Zhou, Xue Cai, Guoping Qian, Zhiqiang Liu\* and Yuguo Zheng



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### Molecular recognition interfaces driving homogeneous zinc deposition for superior Zn metal anodes

Fusheng Luo, Xin Qi, Qing Wu, Jintong Zhang, Song Yang, Xiude Liu, Zeyu Yan and Jun Huang\*

