

# Green Chemistry

Cutting-edge research for a greener sustainable future

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### Cover

See Sara Iborra, Avelino Corma *et al.*, pp. 9118–9131.

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### Inside cover

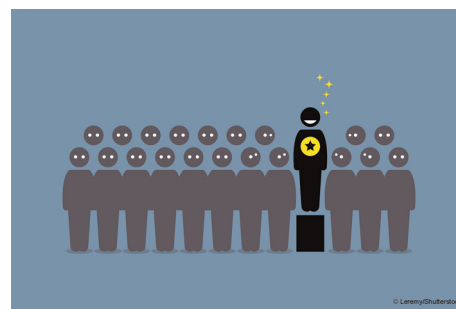
See Xiujuan Li *et al.*, pp. 9132–9141.

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### Outstanding Reviewers for *Green Chemistry* in 2023

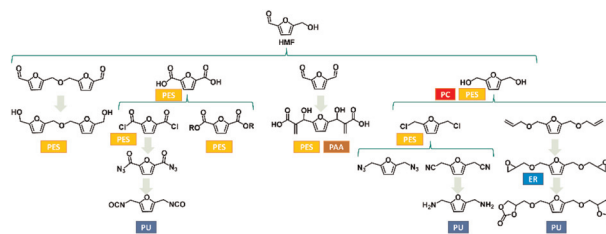


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# RSC Applied Interfaces

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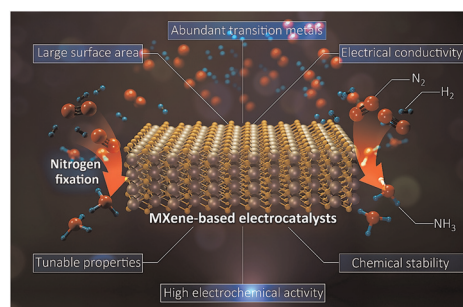
**Fundamental questions  
Elemental answers**

## CRITICAL REVIEWS

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## Next-generation nitrogen fixation strategy: empowering electrocatalysis with MXenes

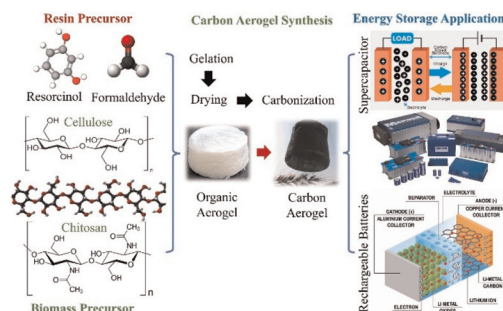
Siavash Iravani,\* Atefeh Zarepour, Arezoo Khosravi, Rajender S. Varma\* and Ali Zarrabi\*



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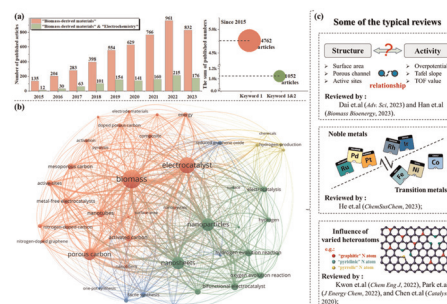
Yafei Shen\* and Jinbei Yang



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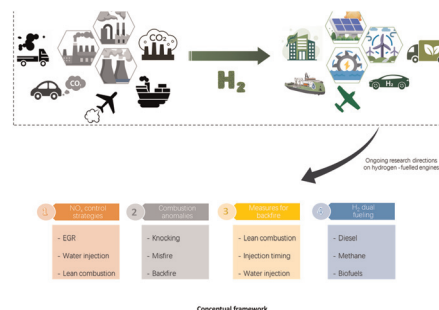
Xiuzheng Zhuang, Huiyi Liang, Xiaohong Hu, Song Li, Xinghua Zhang, Qi Zhang and Longlong Ma\*



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## Race towards net zero emissions (NZE) by 2050: reviewing a decade of research on hydrogen-fuelled internal combustion engines (ICE)

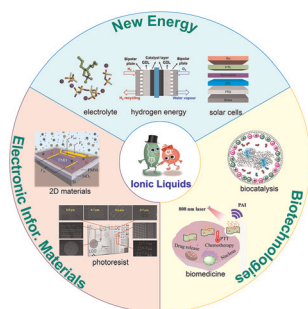
Jeffrey Dankwa Ampah, Chao Jin,\* Sandylove Afrane, Abdulfatah Abdu Yusuf, Haifeng Liu\* and Mingfa Yao





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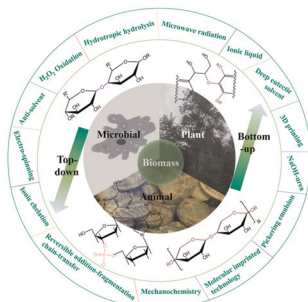
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### The advanced applications of ionic liquids in new energy, electronic information materials, and biotechnologies

Suojiang Zhang,\* Yuhong Huang, Lan Zhang, Yanrong Liu, Qingqing Miao, Ruixia Liu, Weizhen Zhao, Yanyan Diao and Kun Dong

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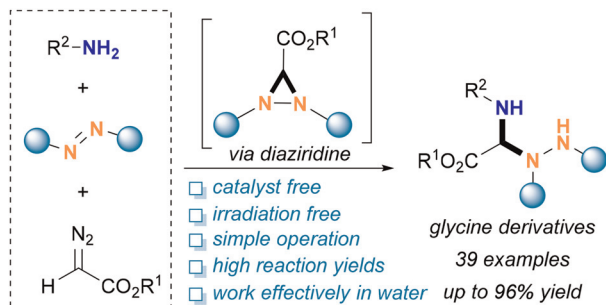


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Ruibin Wang, Youguang Feng, Dongqi Li, Kaixin Li\* and Yong Yan\*

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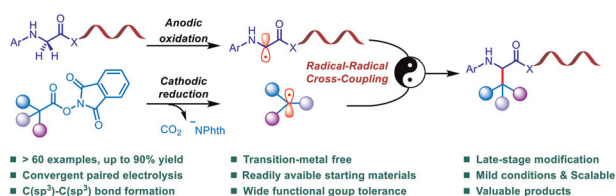
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### Catalyst-free synthesis of hydrazino-containing glycine derivatives *via* a diaziridine *in situ* formation/ring-opening cascade

Chang-Long Rong, Qiang-Qiang Li\* and Jun Xuan\*

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### Metal-free decarboxylative C(sp<sup>3</sup>)-C(sp<sup>3</sup>) bond formation for the synthesis of unnatural amino acids and peptides *via* convergent paired electrolysis enabled radical-radical cross-coupling

Zenghui Ye, Na Chen, Hong Zhang, Yanqi Wu and Fengzhi Zhang\*

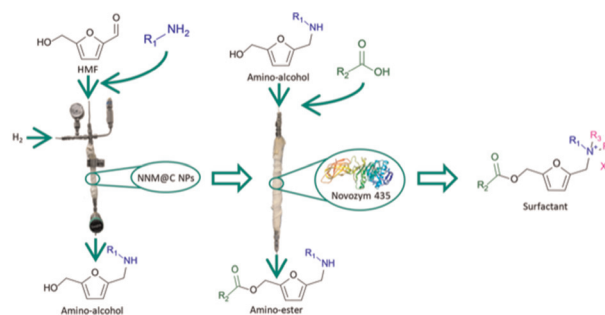


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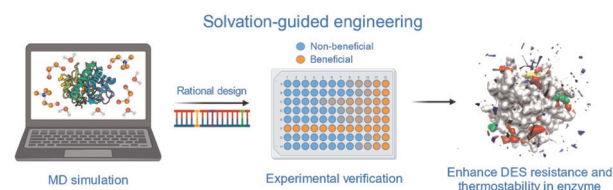
Carlos Moriana Herraiz, Karen S. Arias, Maria J. Climent, Sara Iborra\* and Avelino Corma\*



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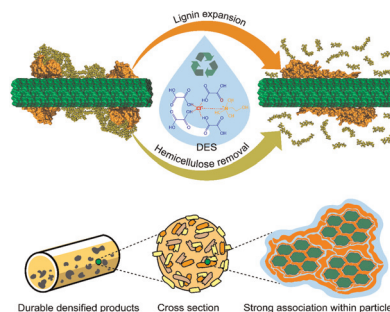
Yijie Sheng, Haiyang Cui, Xinyue Wang, Minghui Wang, Ping Song, He Huang and Xiujuan Li\*



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### Molecular origins of enhanced bioproduct properties by pretreatment of agricultural residues with deep eutectic solvents

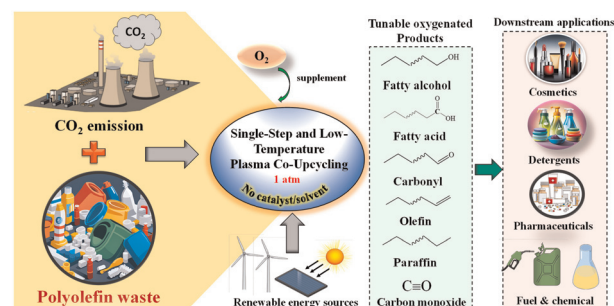
Yan Yu, Zhangmin Wan, Jerry M. Parks, Shahabaddine Sokhansanj, Orlando J. Rojas\* and Jeremy C. Smith\*



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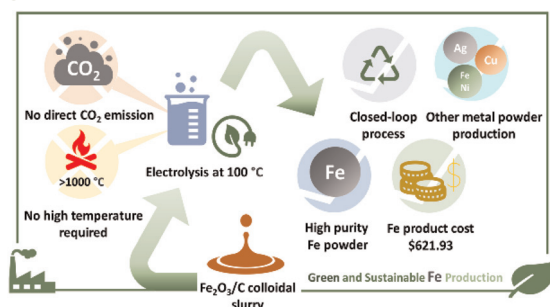
### Non-equilibrium plasma co-upcycling of waste plastics and CO<sub>2</sub> for carbon-negative oleochemicals

Harish Radhakrishnan, Samirah Gnanbe, Alif Duereh, Sultan Ul Iffat Uday, Lusi A, Haiyang Hu, Hui Hu, Mark Mba Wright\* and Xianglan Bai\*



## PAPERS

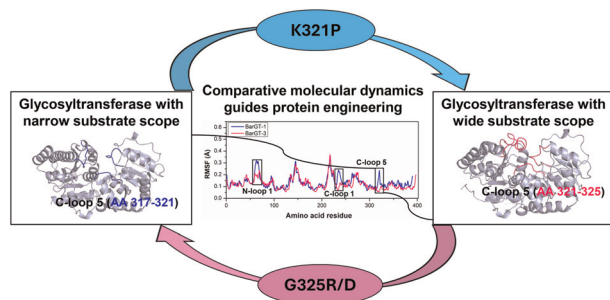
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### Sustainable iron production via highly efficient low-temperature electrolysis of 3D conductive colloidal electrodes

Panya Thanwisai, Zeyi Yao, Muntasir Shahabuddin, Jiahui Hou, Jinzhao Fu, Adam C. Powell IV and Yan Wang\*

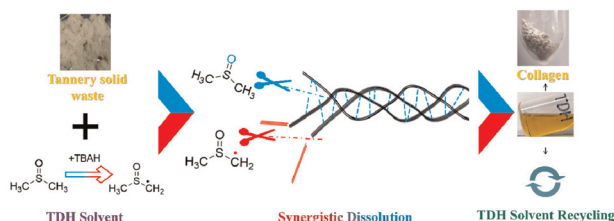
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### A comparative molecular dynamics approach guides the tailoring of glycosyltransferases to meet synthetic applications

Peng Zhang, Shuaiqi Meng, Zhongyu Li, Dennis Hirtz, Lothar Elling, Leilei Zhu, Yu Ji\* and Ulrich Schwaneberg\*

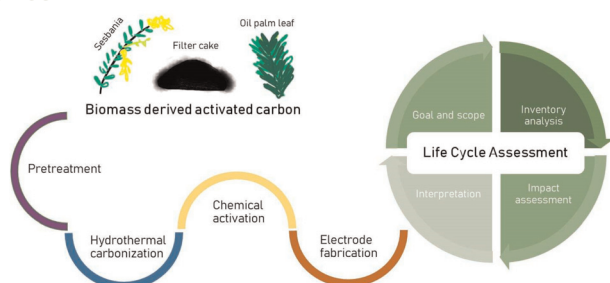
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### Extraction of collagen from bovine tannery solid waste preserving original conformation via radical initiation and hydrogen bond reformation

Fang Luo, Zhuo Liu, Peng Zhou, Siqi Wang, Lingzhi He, Yi Wu, Lidan Du, Mengjie Jiao, Zhuwei Liao and Zhuqi Chen\*

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### Comparative environmental impact assessment of activated carbon electrodes for supercapacitors

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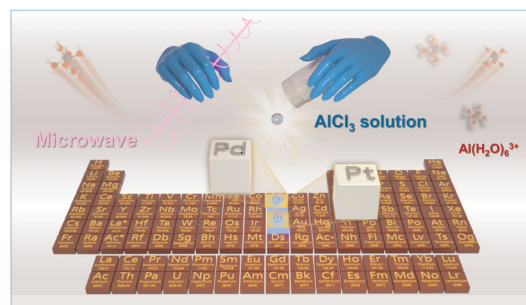


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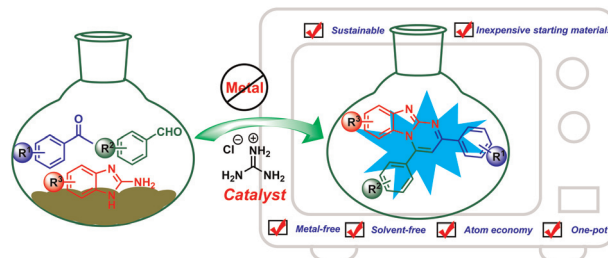
Anting Ding, Chuanying Liu and Chengliang Xiao\*



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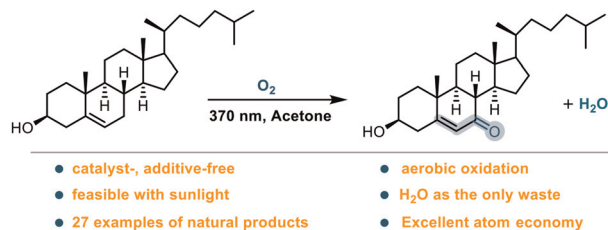
Rushikant Jagdale, Mohammad Zahid Hussain, Koushik Goswami, Ramalingam Peraman and Anupam Jana\*



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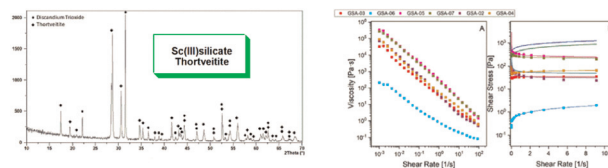
Panyi Huang, Yan Xu, Haijing Song, Jiayin Wang, Jiayang Wang, Jianjun Li, Bin Sun\* and Can Jin\*



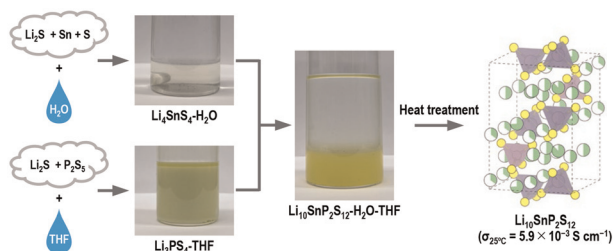
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Takuya Kimura, Hayata Tanigaki, Atsushi Sakuda, Masahiro Tatsumisago and Akitoshi Hayashi\*

