

# Sustainable Energy & Fuels

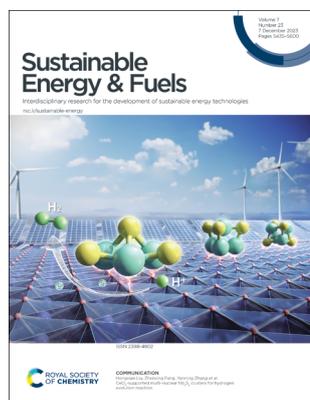
Interdisciplinary research for the development of sustainable energy technologies

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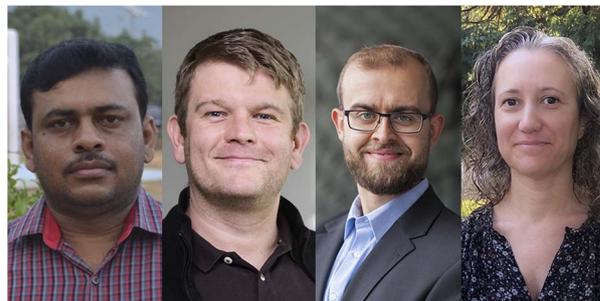
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See Hongxian Liu, Zhenxing Fang, Yanning Zhang *et al.*, pp. 5483–5491. Image reproduced by permission of Hongxian Liu, Zhenxing Fang and Yanning Zhang from *Sustainable Energy Fuels*, 2023, 7, 5483.

## EDITORIAL

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### Shaping the future of hybrid ion capacitors

Vanchiappan Aravindan,<sup>\*</sup> Martin Oschatz,<sup>\*</sup> Konstantin Schutjajew<sup>\*</sup> and Marta Sevilla<sup>\*</sup>

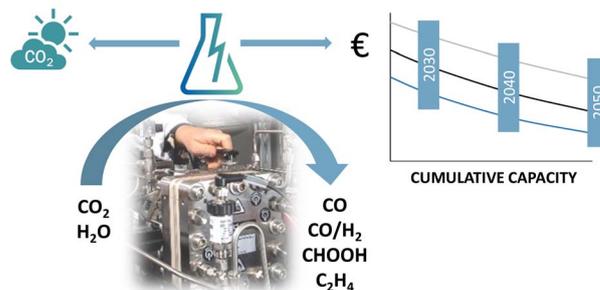


## PERSPECTIVES

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### Electrochemical CO<sub>2</sub> conversion technologies: state-of-the-art and future perspectives

Remko J. Detz,<sup>\*</sup> Claire J. Ferchaud, Arie J. Kalkman, Jasmin Kemper, Carlos Sánchez-Martínez, Marija Saric and Manoj V. Shinde



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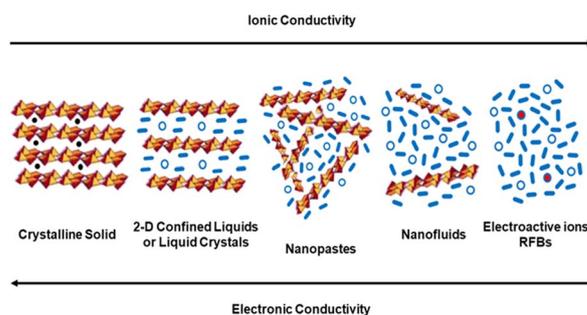


## PERSPECTIVES

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**To flow or not to flow. A perspective on large-scale stationary electrochemical energy storage**

Anukriti Pokhriyal, Daniel Rueda-García and Pedro Gómez-Romero\*

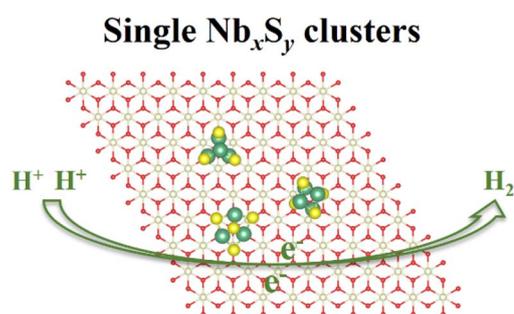


## COMMUNICATIONS

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**CeO<sub>2</sub>-supported multi-nuclear Nb<sub>x</sub>S<sub>y</sub> clusters for hydrogen evolution reaction**

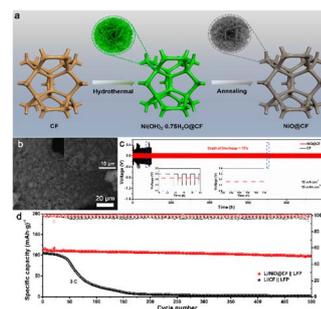
Hongxian Liu,\* Chencheng Zhao, Hong Li, Xuelan Li, Xianfeng Mu, Dunhua Hong, Furu Zhong, Zhenxing Fang\* and Yanning Zhang\*



5492

**Three-dimensional flower-like NiO on Cu foam as a lithiophilic current collector for high-performance lithium metal batteries**

Jiping Ma, Zhanling Zhang,\* Bin Zhang,\* Changyong Huang, Xiaoqian Shi, Yong Liu and Guangmin Zhou



## PAPERS

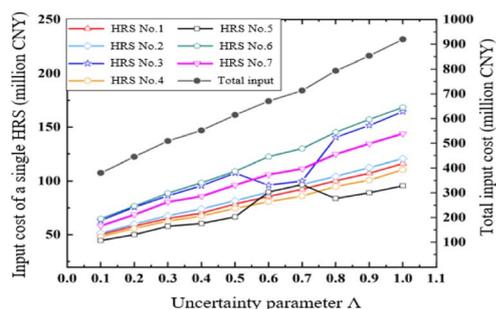
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**Modulating CsPbBr<sub>3</sub> nanocrystals encapsulated in PCN-224(Zr) for boosting full-spectrum-driven CO<sub>2</sub> reduction: S-scheme transfer, photothermal-synergistic effect, and DFT calculations**

Yan-He Chen, Jin-Qiu Shen, Xiao-Lu Chen, Luobing Tang, Na Zhang, Jian-Yong Zhang\* and Zhen-Jiang Liu\*



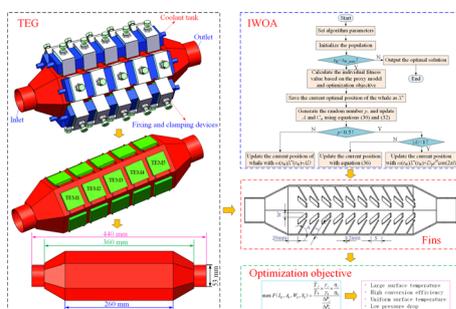
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### Site planning and selection of hydrogen refueling stations considering the life cycle and demand uncertainty

Yan Zhou, Xunpeng Qin, Cenglin Yao,\* Mao Ni, Jun Zhou, Ling Liu, Wenyi Li and Wenlong Yang

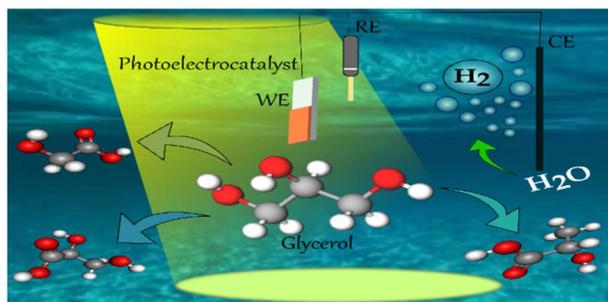
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### Performance optimization of a thermoelectric generator for automotive application using an improved whale optimization algorithm

Rui Quan,\* Haifeng Guo, Dazhi Liu, Yufang Chang and Hang Wan

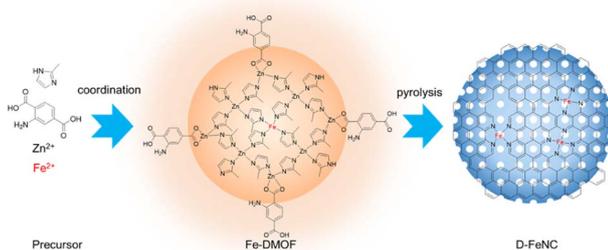
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### Photoelectrochemical conversion of glycerol aqueous solution to value-added chemicals using $\text{Bi}_2\text{Fe}_4\text{O}_9$ as a photoanode

Bruno L. da Silva, Saulo A. Carminati, Matheus B. C. Souza, Leonardo C. Soares, Claudia Longo, Pablo S. Fernández and Ana F. Nogueira\*

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### MOF-derived Fe–N–C electrocatalyst via a dual ligand strategy for efficient oxygen reduction in acidic media

Yi Sheng, Hongmei Zheng, Jingting Hou, Wanying Zhang, Hong Chen, Luanjie Nie, Jing Zheng and Qingxue Lai\*

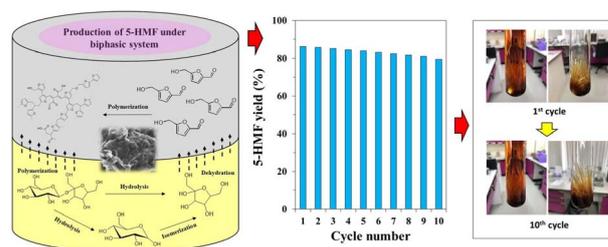


## PAPERS

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### Selective regression models for the rapid upgrading of raw sugar into 5-HMF bio-fuel additive under a sustainable/reusable system

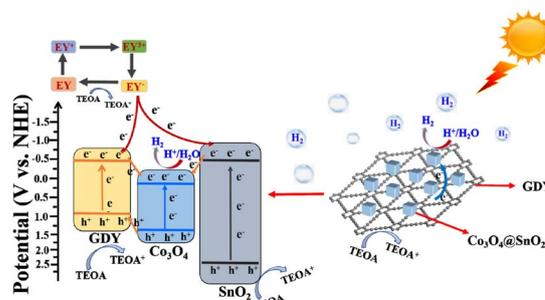
Panya Maneechakr,<sup>\*</sup> Irwan Kurnia, Asep Bayu, Obie Farobie, Chanatip Samart, Suwadee Kongparakul, Guoqing Guan and Surachai Karnjanakom<sup>\*</sup>



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### Co<sub>3</sub>O<sub>4</sub>@SnO<sub>2</sub>/graphdiyne type-II heterojunction and p–n heterojunction jointly enhance photocatalytic hydrogen production: Co–O–Sn bond as a bridge for electron transfer

Xin Guo,<sup>\*</sup> Qian Xiao, Tingting Yang, Yantao Sun and Zhiliang Jin<sup>\*</sup>



## CORRECTION

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### Correction: Closing the balance – on the role of integrating biorefineries in the future energy system

Julia Granacher,<sup>\*</sup> Rafael Castro-Amoedo, Jonas Schnidrig and François Maréchal

