

# Sustainable Energy & Fuels

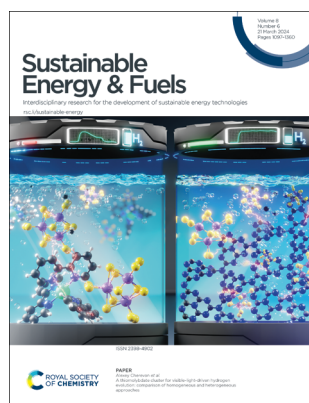
Interdisciplinary research for the development of sustainable energy technologies

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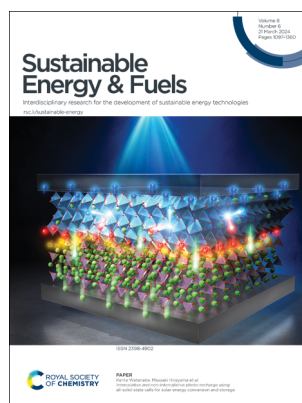
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## IN THIS ISSUE

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**Cover**  
See Alexey Cherevan *et al.*, pp. 1225–1235. Image reproduced by permission of Stephen Myakala.



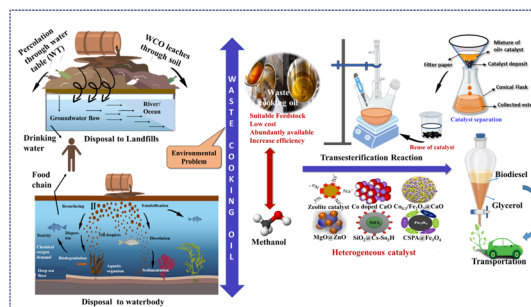
**Inside cover**  
See Kenta Watanabe, Masaaki Hirayama *et al.*, pp. 1236–1244. Image reproduced by permission of Kenta Watanabe from *Sustainable Energy Fuels*, 2024, 8, 1236.

## REVIEWS

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### Current advances and future outlook of heterogeneous catalytic transesterification towards biodiesel production from waste cooking oil

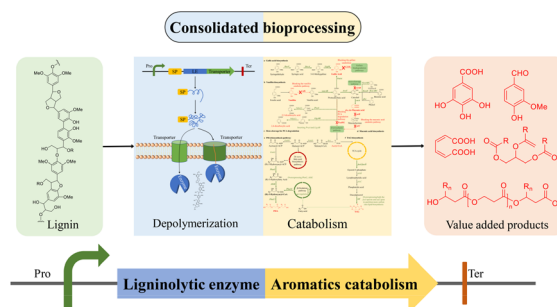
Nabanita Ghosh, Mehulee Patra and Gopinath Halder\*



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### Perspectives and advances in consolidated bioprocessing strategies for lignin valorization

Jianming Guo, Dylan Liu and Yong Xu\*



# RSC Sustainability

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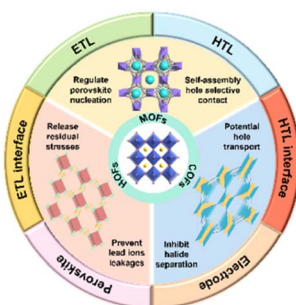
Fundamental questions  
Elemental answers

## REVIEWS

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## Crystalline porous materials in perovskite solar cells: a mutually beneficial marriage

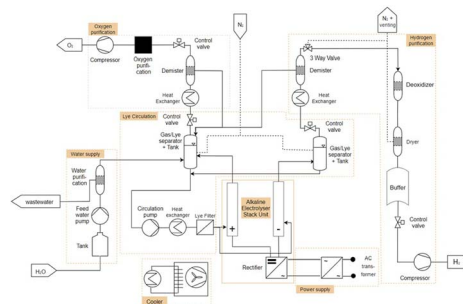
Chi Li and Peng Gao\*



1208

## Modularization approach for large-scale electrolysis systems: a review

Hannes Lange,\* Anselm Klose, Lucien Beisswenger, Daniel Erdmann and Leon Urbas

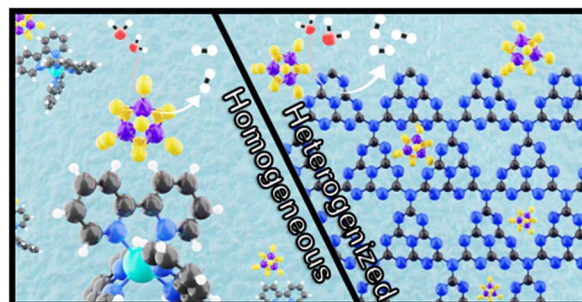


## PAPERS

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## A thiomolybdate cluster for visible-light-driven hydrogen evolution: comparison of homogeneous and heterogeneous approaches

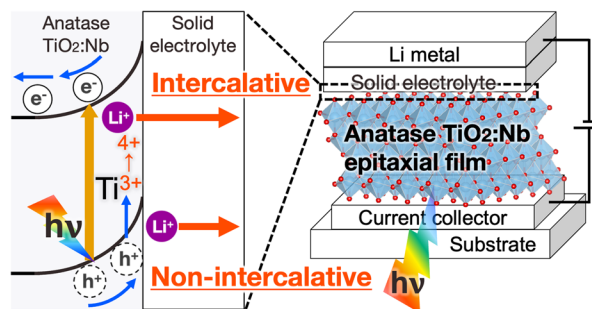
Samar Batool, Jasmin S. Schubert, Pablo Ayala, Hikaru Saito, Maria J. Sampaio, Eliana S. Da Silva, Cláudia G. Silva, Joaquim L. Faria, Dominik Eder and Alexey Cherevan\*



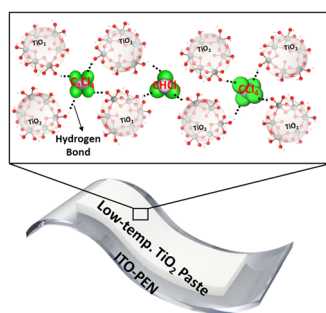
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## Intercalative and non-intercalative photo-recharge using all-solid-state cells for solar energy conversion and storage

Masataka Yoshimoto, Kazuhisa Tamura, Kenta Watanabe,\* Keisuke Shimizu, Yuhei Horisawa, Takeshi Kobayashi, Hanae Tsurita, Kota Suzuki, Ryoji Kanno and Masaaki Hirayama\*



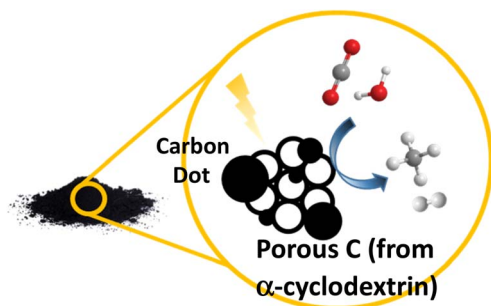
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### Chemical sintering by chlorinated carbon compounds for flexible photoanodes of dye-sensitized photovoltaic cells

Hyeong Cheol Kang, Kicheon Yoo, Md. Mahbubur Rahman, Senthilkumar Muthu, Jun Hwan Jang, Ashok Kumar Kaliyamurthy and Jae-Joon Lee\*

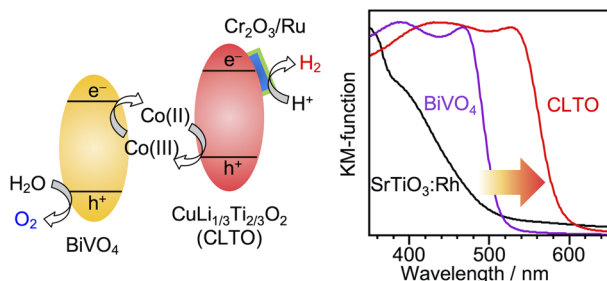
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### Metal-free carbon dot-microporous graphitic carbon heterojunctions as photocatalysts for CO<sub>2</sub> reduction

Ana Garcia-Mulero, María Cabrero-Antonino, Hermenegildo García\* and Ana Primo\*

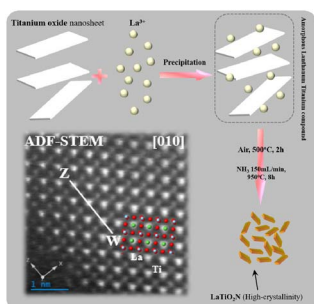
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### Z-scheme water splitting utilizing CuLi<sub>1/3</sub>Ti<sub>2/3</sub>O<sub>2</sub> as a hydrogen-evolving photocatalyst with photo-response up to 600 nm

Shunya Yoshino, Tanya Kurutach, Qingshan Liu, Toshiki Yamanaka, Shunsuke Nozawa, Makoto Kobayashi, Hiromu Kumagai and Hideki Kato\*

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### Synthesis and photocatalytic activity of LaTiO<sub>2</sub>N using titanium oxide nanosheet/La<sup>3+</sup> hybrids as a precursor

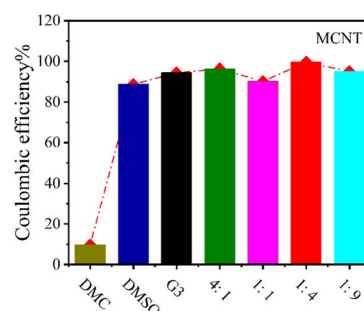
Xiong Tao, Tatsuki Tsugawa, Kzuto Hatakeyama and Shintaro Ida\*



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## The effect of electrolyte with binary solvents on improving the performance of rechargeable lithium–oxygen batteries

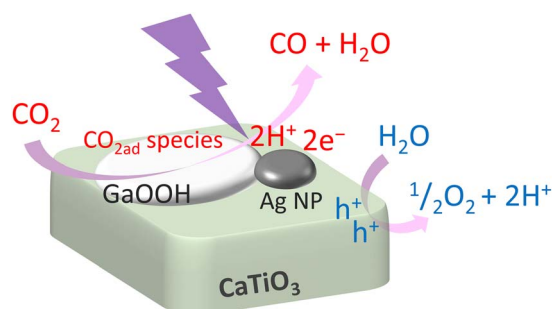
Tie Liu,\* Wenjing Li, Guangwei Zhang and Aishui Yu



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## Surface gallium oxide hydroxide species adsorbing carbon dioxide to enhance the photocatalytic activity of silver-loaded calcium titanate for carbon dioxide reduction with water

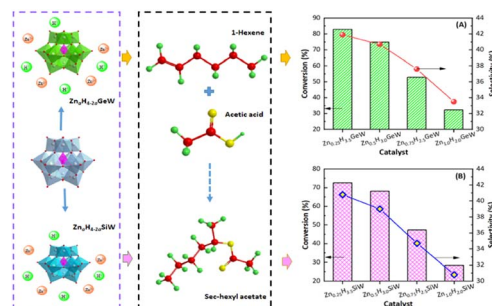
Hongxuan Qiu, Akira Yamamoto and Hisao Yoshida\*



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## Zn-substituted heteropoly acids as efficient catalysts for the addition–esterification of 1-hexene

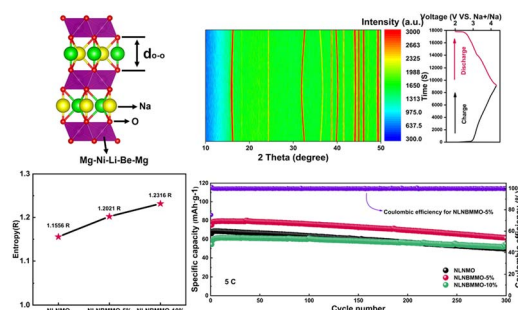
Xiaoyan Xue, Yan Sun, Qiwen Sun,\* Weiren Bao,\* Zongsen Zhang, Liping Chang, Jiancheng Wang and Kechang Xie



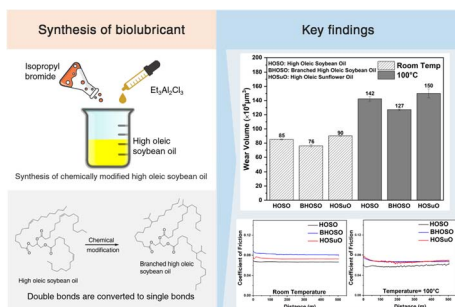
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## A high-entropy layered P2-type cathode with high stability for sodium-ion batteries

Hongfeng Liu, Yingshuai Wang, Xiangyu Ding, Yusong Wang, Feng Wu and Hongcai Gao\*



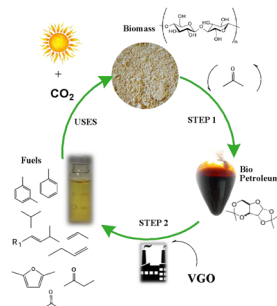
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### Investigating the impact of a newly developed chemical modification technique on improving the tribological properties of high oleic soybean oil

Piash Bhowmik, Brajendra K. Sharma, Majher I. Sarker, Hyunsuk Choi, Clement Tang and Sougata Roy\*

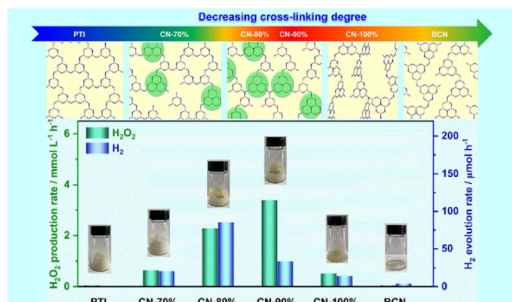
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### From biomass to fuels: a carbon-efficient route combining ketalization and fluid catalytic cracking

Juliana Carvalho, Alessandra Vieira, Alviclérr Magalhães, Leandro S. Mariz e Miranda, Yiu Lau Lam and Marcelo M. Pereira\*

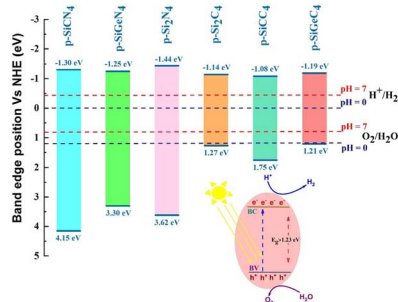
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### Effective inter-chain charge transfer and high charge mobility in polymeric carbon nitride arising from controllable molecular structures for enhanced photocatalytic H<sub>2</sub>O<sub>2</sub> and H<sub>2</sub> production

Zonglin Li, Qing Yang, Hui Zhang,\* Fukai Zheng, Yonghai Wang and Jianhua Sun\*

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### Potential application of ternary pentagonal p-SiXY<sub>4</sub> (X = Si, C, Ge; Y = C, B, N) materials for optoelectronics and photocatalytic water splitting: a first-principles study

M. Maymoun,\* S. Oukahou, A. Elomrani, A. Benaddi, A. Etrini, H. Ataalite, Y. Bahou, A. Hasnaoui and K. Sbiaai

