

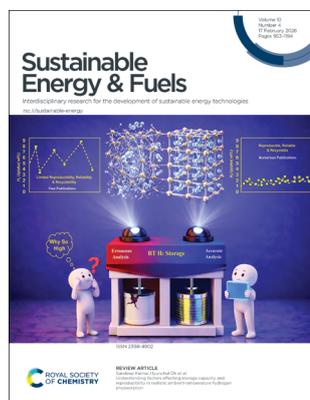
Sustainable Energy & Fuels

Interdisciplinary research for the development of sustainable energy technologies
rsc.li/sustainable-energy

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

IN THIS ISSUE

ISSN 2398-4902 CODEN SEFUA7 10(4) 953–1194 (2026)



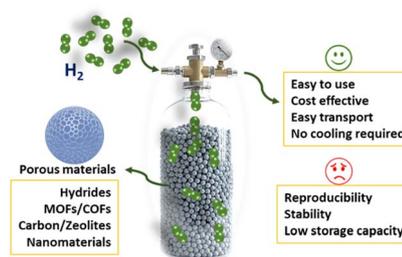
Cover
See Sandeep Kumar, Hyunchul Oh *et al.*, pp. 961–983. Image reproduced by permission of Hyunchul Oh from *Sustainable Energy Fuels*, 2026, 10, 961.

REVIEWS

961

Understanding factors affecting storage capacity and reproducibility in realistic ambient-temperature hydrogen physisorption

Sandeep Kumar,* Munkhshur Myekhlai, Subin Lim and Hyunchul Oh*

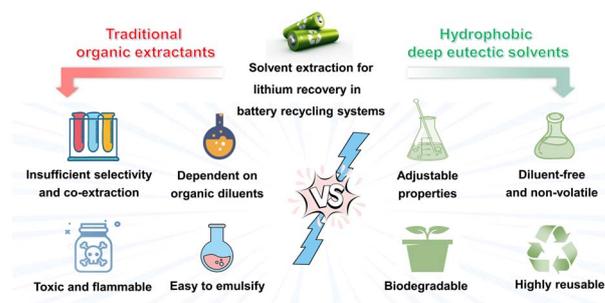


Room temperature hydrogen storage

984

Hydrophobic deep eutectic solvents for sustainable lithium recovery in battery recycling systems

Aedo Matias, Xiaohui Lu, Jie Wang, Chaowu Wang and Qibo Zhang*



Advance your career in science

with professional recognition that showcases
your **experience, expertise and dedication**

Stand out from the crowd

Prove your commitment
to attaining excellence in
your field

Gain the recognition you deserve

Achieve a professional
qualification that inspires
confidence and trust

Unlock your career potential

Apply for our professional
registers (RSci, RSciTech)
or chartered status
(CChem, CSci, CEnv)

Apply now

rsc.li/professional-development

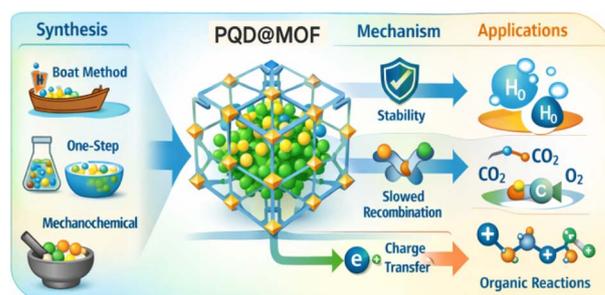


REVIEWS

1003

Perovskite quantum dot@MOF heterostructures: highly efficient and stable visible-light photocatalysts

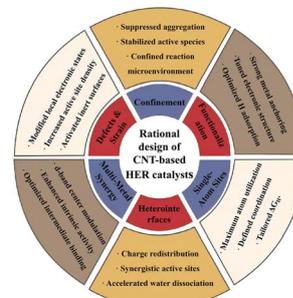
Mohamed Abu Shuheil, Ahmed Aldulaimi, Subhashree Ray, Talal Aziz Qassem, Gunjan Garg, Renu Sharma, Dilbar Urazbaeva, Sabokhat Sadikova and Sharmin Smaeilpour*



1024

Rational design strategies for carbon nanotube-based non-precious metal HER catalysts: a review

Xiaomei Wang*

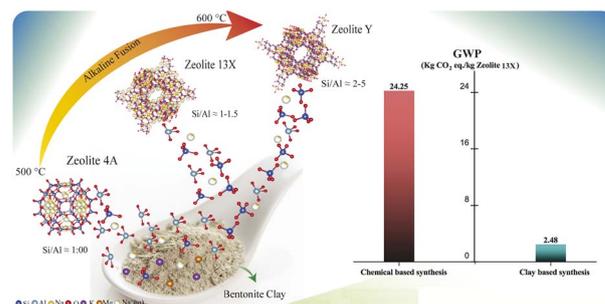


PAPERS

1038

A sustainable multi-zeolite synthetic framework from a single natural clay: CO₂/H₂O adsorption performance and life cycle assessment benefits

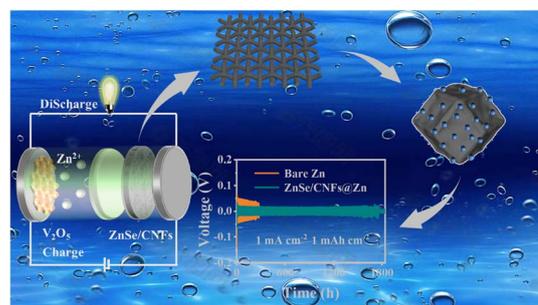
Biruktait Ayele Lemecho,* Jordi Espín, Pattaraphon Rodlamul, Florian Kiefer, Wendy Lee Queen and Vivek Subramanian*



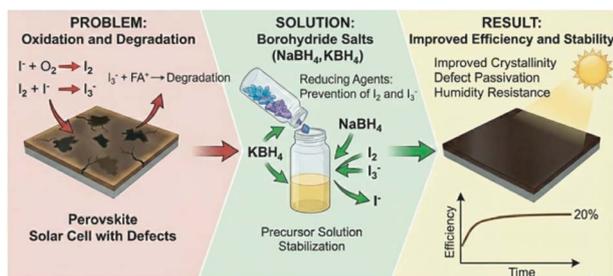
1059

ZnSe grown on carbon nanofibers derived from ZIF-8 as a zincophilic layer for zinc metal anodes

Yudong Feng, Zhaoli Liu, Yuying Zheng, Yuanpei Li and Xingwei Sun*



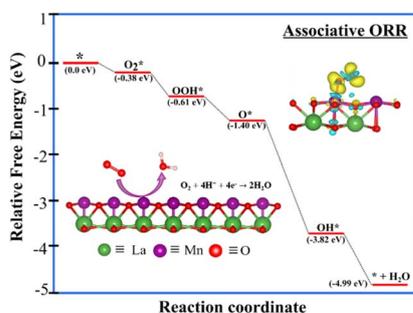
1069



The dual role of borohydride salts in enhancing perovskite solar cell performance and stability

Teresa Diaz-Perez, Carina Pareja-Rivera, Jorge Pascual, Hector Juarez S., Sofia Masi,* Eva M. Barea,* Silver-Hamill Turren-Cruz* and Iván Mora-Seró*

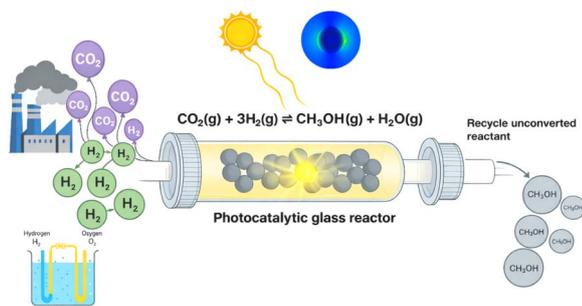
1080



Elucidating the O₂ reduction reaction on 2D monolayer LaMnO₃ perovskite

Naveen Sharma and Srimanta Pakhira*

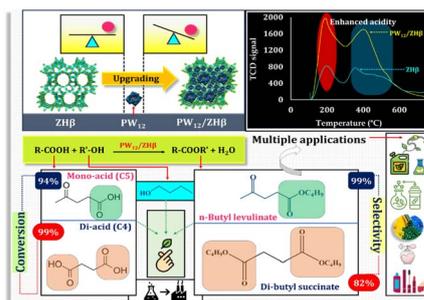
1093



Synergistic plasmonic–semiconductor heterointerfaces enabling efficient CO₂ hydrogenation to methanol under visible-light irradiation

Abdul Malek, Anh-Tuan Hoang, Md. Tarekul Islam, Mohammad A. Hasnat, Tarikul Islam* and Aminul Islam*

1108



Upgrading the Brønsted acidity of zeolite Hβ via phosphotungstates: engineering a high-performance catalytic platform for the production of energy-efficient biofuel additives

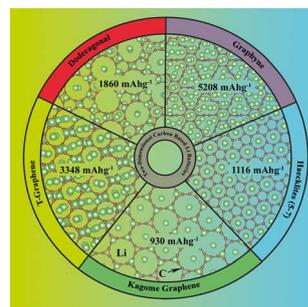
Margi Joshi and Anjali Patel*



1122

Engineering two-dimensional carbon anodes for enhanced lithium battery performance

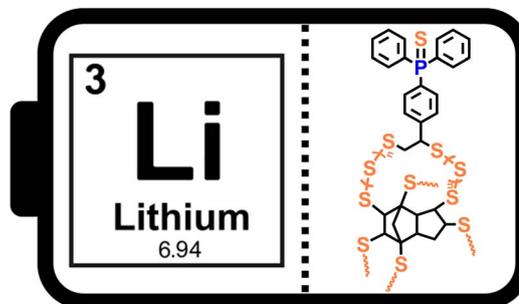
Fuat Bilican, Fatih Ersan* and Sevgi Ozdemir Kart*



1135

Phosphorous containing inverse vulcanised sulfur polymers as Li–sulfur positive electrodes

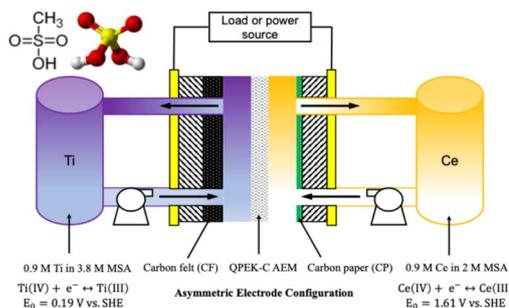
Haoran Wang, Pan Yang, Alex R. Neale, Liam J. Dodd, Peiyao Yan, Bowen Zhang, Laurence J. Hardwick* and Tom Hasell*



1147

Asymmetric electrode configurations enhance operating power density and energy efficiency of an aqueous, electrode-decoupled titanium–cerium redox flow battery

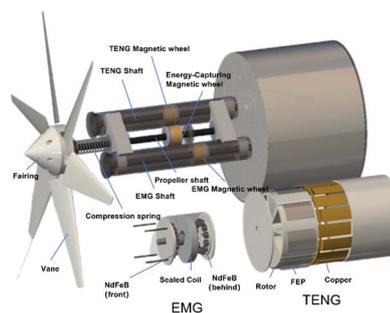
Jing Xie, Shrihari Sankarasubramanian and Vijay Ramani*

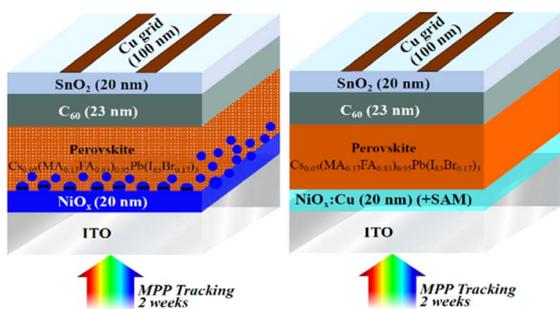


1165

Switchable tribo-electromagnetic composite generator based on magnetic-spring dynamic coupling for low-velocity flow energy harvesting

Da Che, Xiao Zhang,* Guanzheng Xu, Yanhui Wang, Futian Geng, Siyu Zhang, Fei Zhong and Wanqiang Zhu*





Investigation of interfacial charge-carrier dynamics, degradation, and recombination mechanisms in single-junction perovskite solar cells with NiO_x and SAM hole-transporting layers via steady-state drift-diffusion model simulations

Ivona Kafedjiska,^{*} Vincent M. Le Corre, Hans Köbler, Igal Levine, Rutger Schlatmann and Iver Lauer mann

