

Energy Advances

rsc.li/energy-advances

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 2753-1457 CODEN EANDBJ 4(2) 179-322 (2025)



Cover

See Pin-Yi Zhao, Kwang-Leong Choy *et al.*, pp. 244-248. Image reproduced by permission of Pin-Yi Zhao from *Energy Adv.*, 2025, 4, 244.



Inside cover

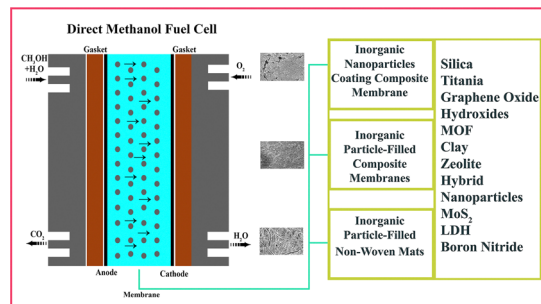
See Xinhua Liang *et al.*, pp. 249-261. Image reproduced by permission of Ahmad Helalely and Xinhua Liang from *Energy Adv.*, 2025, 4, 249.

REVIEWS

185

A review of proton exchange membranes modified with inorganic nanomaterials for fuel cells

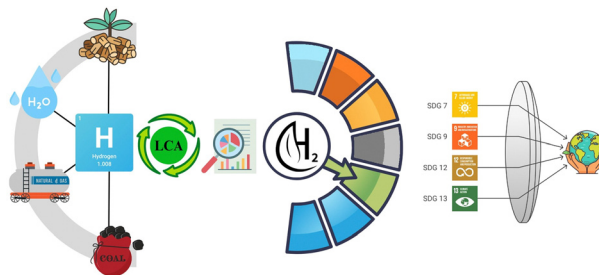
Muhammad Rehman Asghar,* Weiqi Zhang, Huaneng Su, Junliang Zhang, Huiyuan Liu, Lei Xing, Xiaohui Yan and Qian Xu*



224

Exploring the spectrum: an environmental examination of hydrogen's diverse colors

Hafsa Mehmood, Haseeb Akbar, Pariyapat Nilsalab and Shabbir H. Gheewala*



Royal Society of Chemistry approved training courses

Explore your options.
Develop your skills.
Discover learning
that suits you.

**Courses in the classroom,
the lab, or online**

Find something for every
stage of your professional
development. Search our
database by:

- subject area
- location
- event type
- skill level

Members **get at least 10% off**

Visit rsc.li/cpd-training



**SAVE
10%**

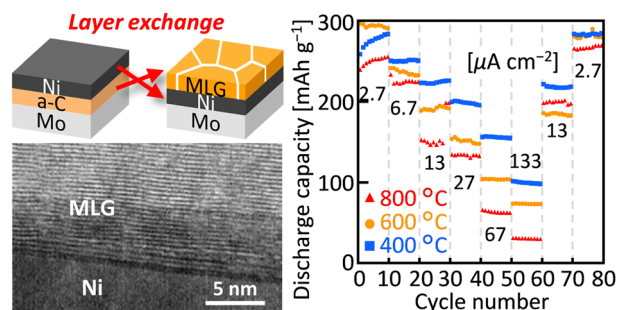


COMMUNICATION

239

Effects of annealing conditions on the battery anode properties of multilayer graphene due to layer exchange

R. Ito, K. Nozawa, N. Saitoh, N. Yoshizawa, T. Suemasu and K. Toko*

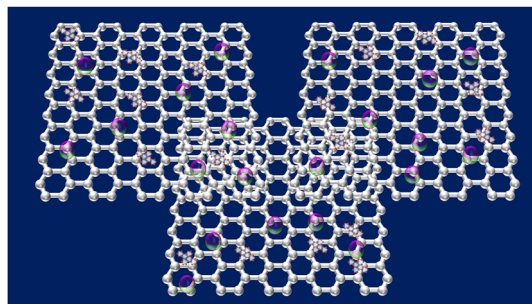


PAPERS

244

Enhanced electrochemical performance by alumina-coated graphite anodes *via* spray coating

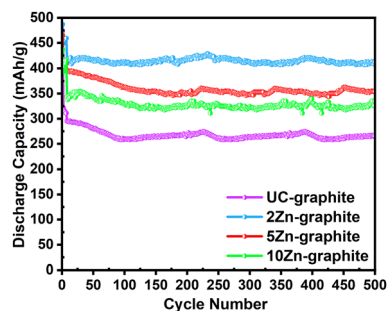
Pin-Yi Zhao,* Kwang-Leong Choy,* Yongyi Song, Shudong Zhang and Rui Ma



249

Graphite particles modified by ZnO atomic layer deposition for Li-ion battery anodes

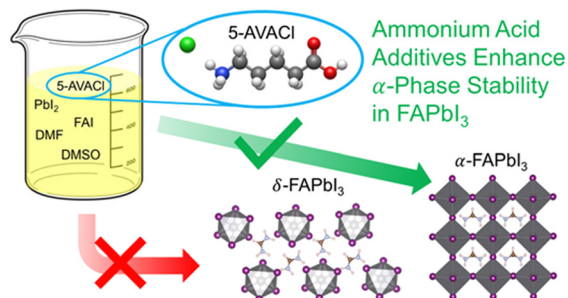
Ahmad Helaley, Han Yu and Xinhua Liang*



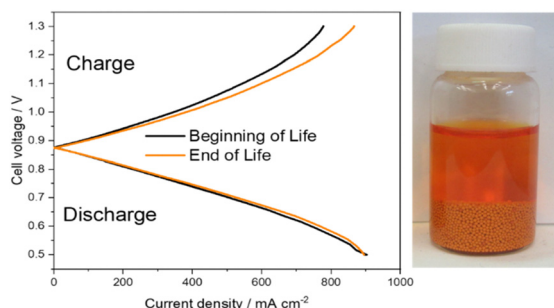
262

Enhanced α -phase stability of formamidinium lead iodide with addition of 5-ammonium valeric acid chloride

Yanan Li, Abigale Bahnick, Patrick J. Lohr, Sean Raglow and Adam D. Printz*



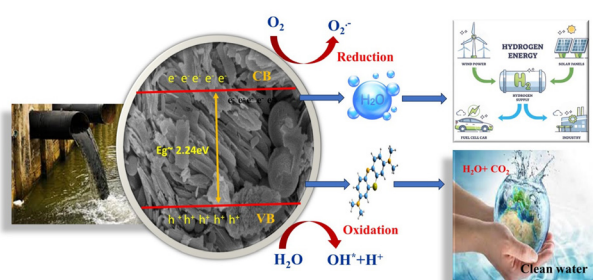
273



Solid bromine complexing agents: long-term solution for corrosive conditions in redox-flow battery

Kobby Saadi, Raphael Flack, Valery Bourbo, Ran Elazari and David Zitoun*

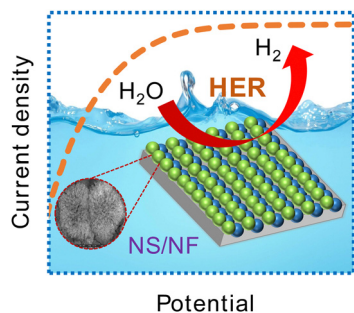
281



In situ synthesis of VO₂@C nanocomposites for enhanced visible-light photocatalysis in wastewater remediation and sustainable hydrogen generation

Yogita Padwal, Ratna Chauhan,* Indra Jeet Chaudhary, Dattatray J. Late, Muthupandian Ashokkumar and Suresh Gosavi*

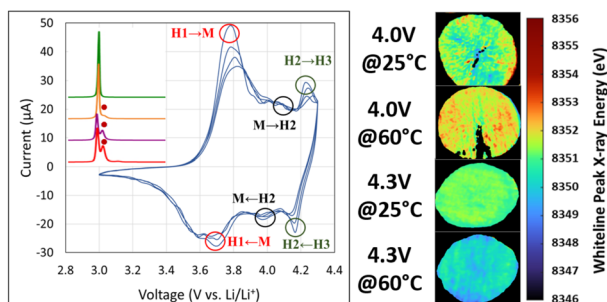
296



Extending the accessibility of catalytic active sites through L-cysteine assisted sulfidation for promoting the hydrogen evolution reaction

Prince J. J. Sagayaraj, Kavinkumar S., Keishi Oyama, Naoko Okibe,* Hyoung-il Kim* and Karthikeyan Sekar*

304



Voltage and temperature effects on low cobalt lithium-ion battery cathode degradation

Hernando J. Gonzalez Malabet, Megan Gober, Prehit Patel, Alex L'Antigua, Austin Gabhart, Joseah Amai, Xianghui Xiao and George J. Nelson*

