

Industrial Chemistry & Materials

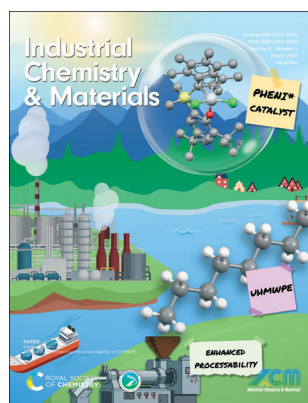
An international journal of significant innovative research and major technological breakthroughs in all aspects of industrial chemistry and materials

rsc.li/icm

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 2755-2500 CODEN ICMNCZ 3(2) 125-248 (2025)



Cover

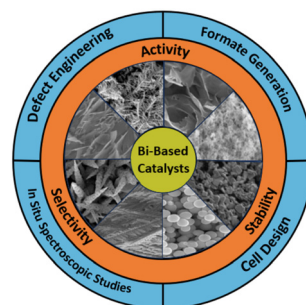
See Dermot O'Hare *et al.*,
pp. 178–190.
Image reproduced by
permission of Dermot O'Hare
from *Ind. Chem. Mater.*,
2025, 3, 178.

REVIEWS

131

Unveiling the potential of bismuth-based catalysts for electrochemical CO₂ reduction

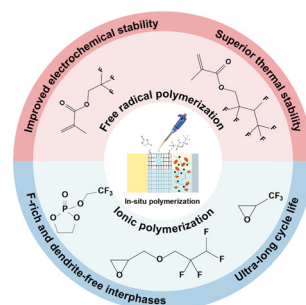
Negar Sabouhanian, Jacek Lipkowski*
and Aicheng Chen*



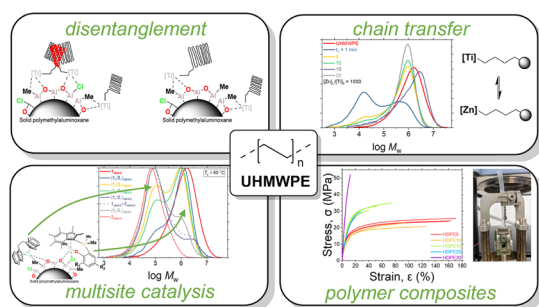
151

In situ polymerization of fluorinated electrolytes for high-voltage and long-cycling solid-state lithium metal batteries

Yunpei Lu, Xinyi Zhang, Yong Wu, Hao Cheng
and Yingying Lu*



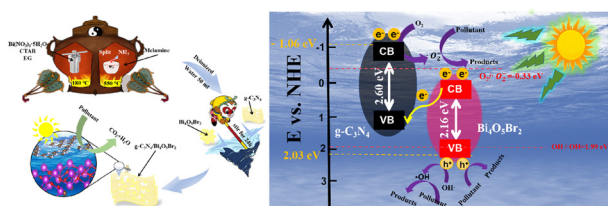
178



Strategies for enhancing the processability of UHMWPE

Clement G. Collins Rice, Alexander Evans, Zoë R. Turner, Jirut Wattoom and Dermot O'Hare*

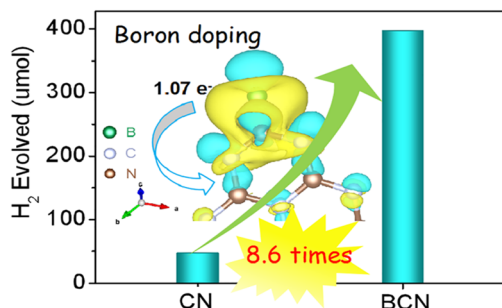
191



Enhanced pollutant photodegradation activity of graphitic carbon nitride on via bismuth oxyhalide graphene hybridization and the mechanism study

Xinghui Liu,* Yang Liu, Xiang Guo,* Bowen Tao, Xu Ma, Simin Cheng, Ning Tian, Gaihui Liu, Qiao Wu, Viet Q. Bui, Kuldeep K. Saxena, Sankar Ganesh Ramaraj, Jianhui Liu, Fuchun Zhang* and Yongfa Zhu*

203



Rational design of a carbon nitride photocatalyst with in-plane electron delocalization for photocatalytic hydrogen evolution

Quanguo Hao,* Yuhua Zhu, Yuan Li, Zhenhua Li,* Hong Yuan and Shuxin Ouyang

213



Membrane-free sequential paired electrosynthesis of 1,4-hydroquinone from phenol over a self-supported electrocatalytic electrode

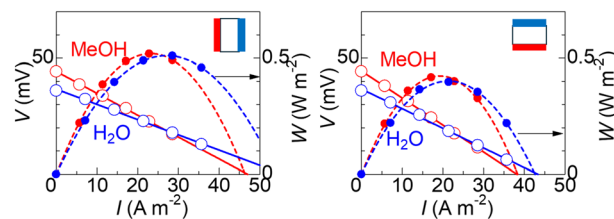
Wei-Ling Zhang, Ya-Jing Li, Yingchun He, Shao Zhang,* Haohong Li, Huidong Zheng* and Qi-Long Zhu*



223

Methanol-based thermoelectric conversion device with high power

Touya Aiba, Haruka Yamada and Yutaka Moritomo*



231

Scalable manufacturing and reprocessing of vitrimerized flexible polyurethane foam (PUF) based on commercial soy polyols

Wangcheng Liu, Yaqiong Zhang, Peter Chen, Lin Shao, Yiding Cao, Baoming Zhao, Ellen C. Lee, Xiaojiang Wang and Jinwen Zhang*

