

EES Catalysis

rsc.li/eescatalysis

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

eISSN 2753–801X CODEN ECEACE 2(4) 877–1028 (2024)



Cover

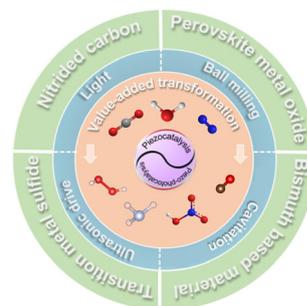
See Jan Rossmeisl, Maria Escudero-Escribano *et al.*, pp. 941–952. Image reproduced by permission of Jack Kirk Pedersen from *EES Catal.*, 2024, 2, 941.

REVIEW

884

Advancements and opportunities in piezo-(photo)catalytic synthesis of value-added chemicals

Weiliang Qi, Yaping Fu, Enbo Liu, Zhixing Cheng, Yuxiu Sun, Siqi Liu and Minghui Yang*

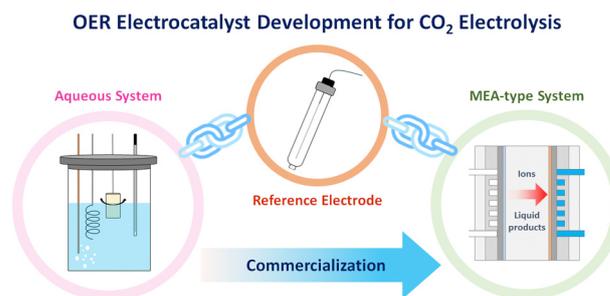


PERSPECTIVE

911

Direction of oxygen evolution reaction electrocatalyst evaluation for an anion exchange membrane CO₂ electrolyzer

Seontaek Kwon, Tae-Hoon Kong, Namgyoo Park, Pandiarajan Thangavel, Hojeong Lee, Seokmin Shin, Jihoo Cha and Youngkook Kwon*



ChemComm

Uncover new possibilities
with outstanding
preliminary research

Original discoveries, fuelling
every step of scientific progress

rsc.li/chemcomm

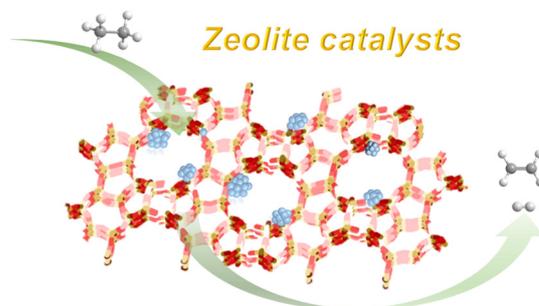
Fundamental questions
Elemental answers

MINIREVIEW

923

Zeolite catalysts for non-oxidative ethane dehydrogenation to ethylene

Lu Liu, Liang Wang* and Feng-Shou Xiao*

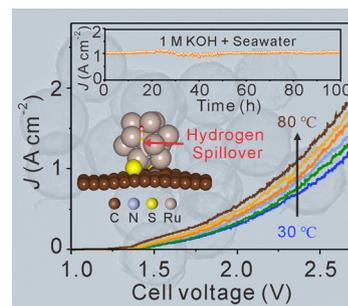


COMMUNICATION

932

Sulfur-regulated metal–support interaction boosting the hydrogen evolution performance of Ru clusters in seawater at industrial current densities

Ranran Tang, Ping Yan, Yitong Zhou* and Xin-Yao Yu*

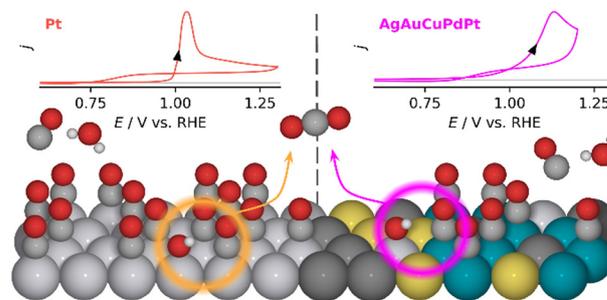


PAPERS

941

Toward understanding CO oxidation on high-entropy alloy electrocatalysts

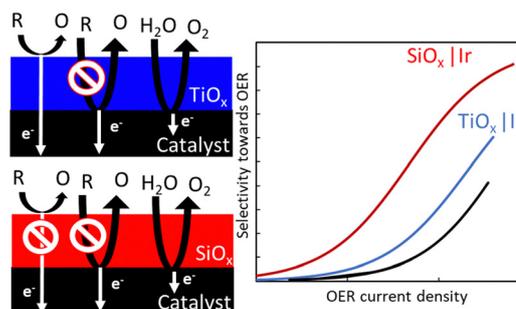
María Paula Salinas-Quezada, Jack K. Pedersen, Paula Sebastián-Pascual, Ib Chorkendorff, Krishanu Biswas, Jan Rossmeisl* and María Escudero-Escribano*



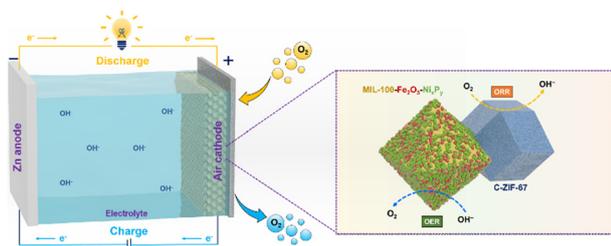
953

Probing the active sites of oxide encapsulated electrocatalysts with controllable oxygen evolution selectivity

William D. H. Stinson, Robert S. Stinson, Jingjing Jin, Zejie Chen, Mingjie Xu, Fikret Aydin, Yinxian Wang, Marcos F. Calegari Andrade, Xiaoqing Pan, Tuan Anh Pham, Katherine E. Hurst, Tadashi Ogitsu, Shane Ardo and Daniel V. Esposito*



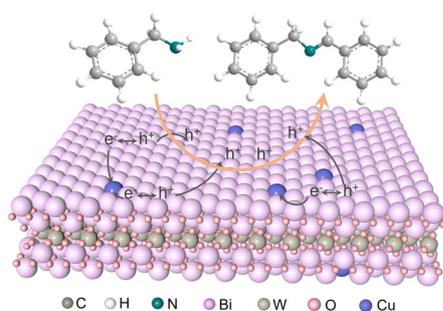
968



A bi-functional air electrode developed from a dual-MOF strategy for high-performance zinc–air batteries

Yasir Arafat, Muhammad Rizwan Azhar, Yijun Zhong, Xiaomin Xu, Moses O. Tadé and Zongping Shao*

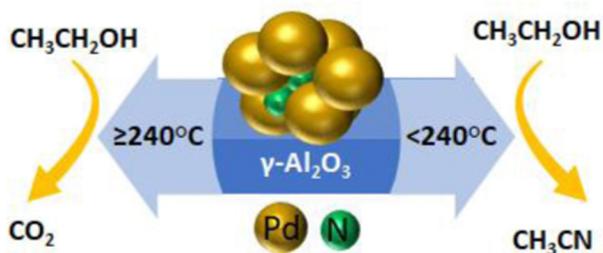
980



Variable-valence element doping mediated photogenerated electron trapping for selective oxidation reactions

Xia Zhong, Yan Zhao, Lei Li, Xin He, Hui Wang,* Xiaodong Zhang* and Yi Xie*

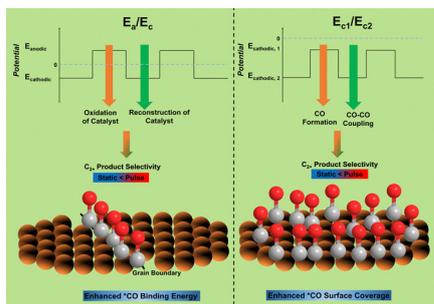
987



Structural selectivity of supported Pd nanoparticles: selective ethanol ammoxidation to acetonitrile

Khaled Mohammed, Reza Vakili, Donato Decarolis, Shaojun Xu, Luke Keenan, Apostolos Kordatos, Nikolay Zhelev, Chris K. Skylaris, Marina Carravetta, Emma K. Gibson, Haresh Manyar, Alexandre Goguet and Peter P. Wells*

997



Operational strategies of pulsed electrolysis to enhance multi-carbon product formation in electrocatalytic CO₂ reduction

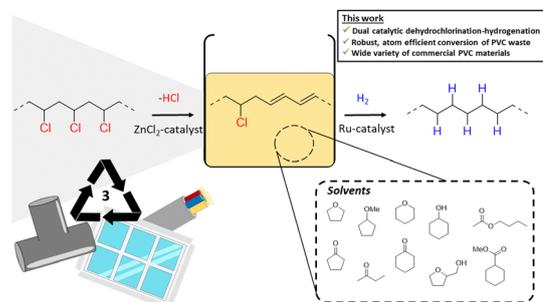
Takashi Ito, Jithu Raj, Tianyu Zhang, Soumyabrata Roy and Jingjie Wu*



1006

Conversion of diverse post-consumer PVC waste materials to PE via dual catalytic tandem dehydrochlorination–hydrogenation

Galahad O'Rourke, Alina Skorynina, Igor Beckers, Sam Van Minnebruggen, Christel Colemonts, Philippe Gabriels, Peter Van der Veken and Dirk De Vos*



1019

Understanding the charge transfer dynamics in 3D–1D nanocomposites over solar driven synergistic selective valorization of lignocellulosic biomass: a new sustainable approach

Arpna Jaryal, Ajit Kumar Singh, Shivali Dhingra, Himanshu Bhatt, Manvi Sachdeva, Hirendra N. Ghosh,* Arindam Indra* and Kamalakannan Kailasam*

