

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.

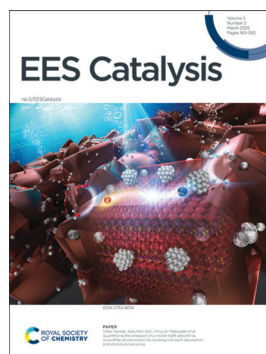
IN THIS ISSUE

eISSN 2753–801X CODEN ECEACE 3(2) 163–350 (2025)



Cover

See Jieun Jung, Susumu Saito *et al.*, pp. 254–258. Image reproduced by permission of Susumo Saito and Issei Takahashi from *EES Catal.*, 2025, 3, 254.



Inside cover

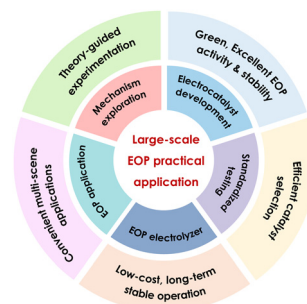
See Vikas Nandal, Kazuhiko Seki, Hiroyuki Matsuzaki *et al.*, pp. 274–285. Image reproduced by permission of Vikas Nandal, Kazuhiko Seki and Hiroyuki Matsuzaki from *EES Catal.*, 2025, 3, 274.

REVIEWS

170

Electrochemical ozone production: from fundamental mechanisms to advanced applications

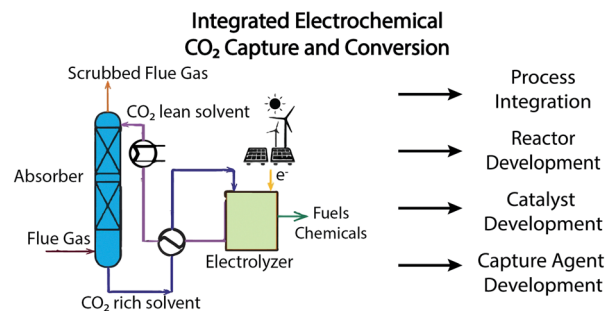
Jia Liu, Xiaoge Peng, Xiaosa Wang, Xing Zhong* and Jianguo Wang*



205

Integrated CO₂ capture and electrochemical conversion: coupled effects of transport, kinetics and thermodynamics in the direct reduction of captured-CO₂ adducts

Avishek Banerjee and Carlos G. Morales-Guio*



**GOLD
OPEN
ACCESS**

EES Batteries

**Exceptional research on
batteries and energy storage**

Part of the EES family



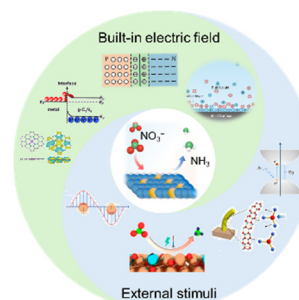
**Join
in** | Publish with us
rsc.li/EESBatteries

REVIEWS

235

Ammonia synthesis from nitrate reduction by the modulation of a built-in electric field and external stimuli

Shaoce Zhang, Rong Zhang, Ying Guo and Chunyi Zhi*

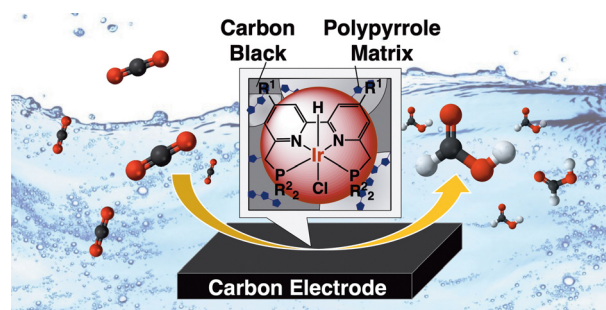


COMMUNICATIONS

254

Selective electroreduction of CO₂ to formate by a heterogenized Ir complex using H₂O as an electron/hydrogen source

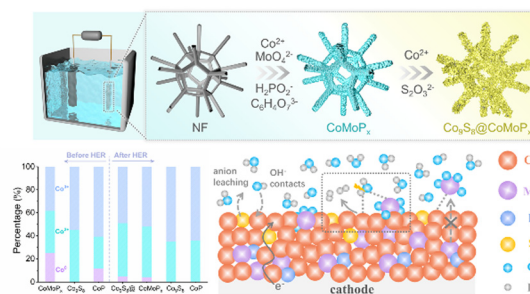
Jieun Jung,* Keun Woo Lee, Naonari Sakamoto, Selvam Kaliyamoorthy, Taku Wakabayashi, Kenji Kamada, Keita Sekizawa, Shunsuke Sato, Tomiko M. Suzuki, Takeshi Morikawa and Susumu Saito*



259

Integrating oxophilic and protophilic properties in a multivalent Co₉S₈@CoMoP_x electrode to boost alkaline hydrogen evolution

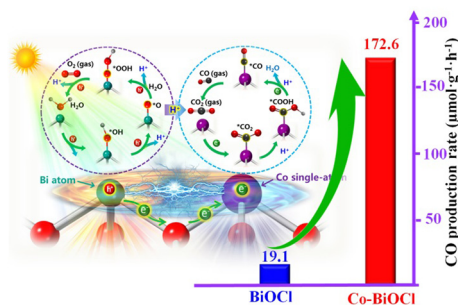
Xijie Chen, Fengming Zhang, Xiao Wang, Fangming Liu, Jinhan Li, Meng Yu* and Fangyi Cheng*



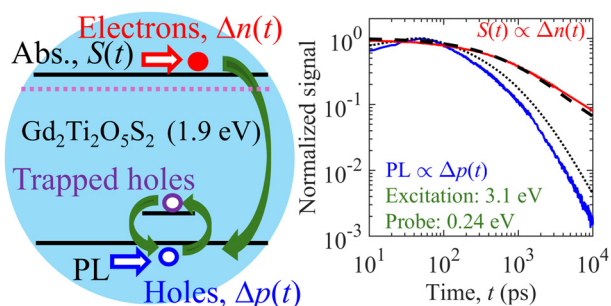
268

Neighboring effects of single-atom cobalt enable high-performance CO₂ photoreduction

Wenkai Yan, Yajun Zhang, Guojun Dong and Yingpu Bi*



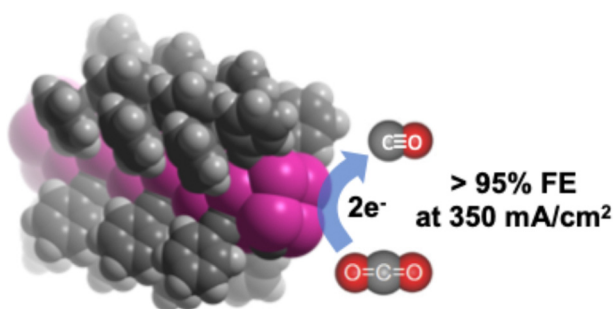
274



Quantifying the prospect of a visible-light-absorbing oxysulfide photocatalyst by probing transient absorption and photoluminescence

Ryota Shoji, Vikas Nandal,* Kazuhiko Seki,* Xiaoping Tao, Akihiro Furube, Takashi Hisatomi, Hiroaki Yoshida, Tsuyoshi Takata, Masanori Kaneko, Koichi Yamashita, Kazunari Domen and Hiroyuki Matsuzaki*

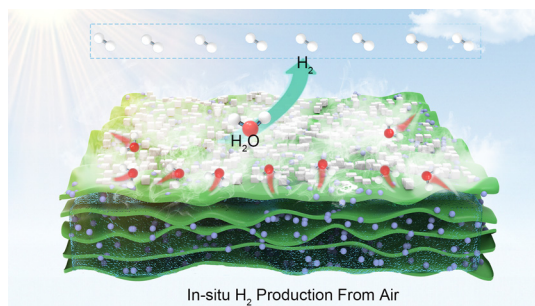
286



Self-assembled infinite silver cluster with atomic precision as a scalable catalyst for CO₂-electroreduction under industry-relevant reaction rates

Leonard Curet, William Lafargue dit-Hauret, Jordi Benet-Buchholz, Marta Martínez-Belmonte, Dominique Foix, Emilio Palomares,* Laurent Billon, Didier Begué and Aurelien Viterisi*

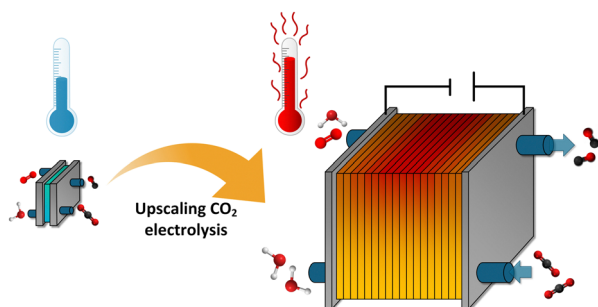
297



In situ hydrogen production in all-level-humidity air: integrating atmospheric water harvesting with photocatalysis

Xueli Yan, Li Tian, Fei Xue, Jie Huang, Rui Zhao, Xiangjiu Guan,* Jinwen Shi,* Wenshuai Chen* and Maochang Liu*

305



Heating dictates the scalability of CO₂ electrolyzer types

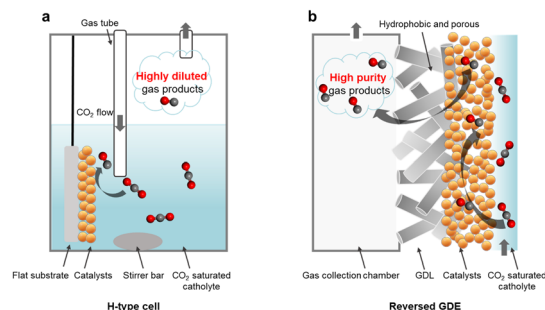
Jan-Willem Hurkmans, Henri M. Pelzer, Tom Burdyny, Jurriaan Peeters and David A. Vermaas*



318

A reversed gas diffusion electrode enables collection of high purity gas products from CO₂ electroreduction

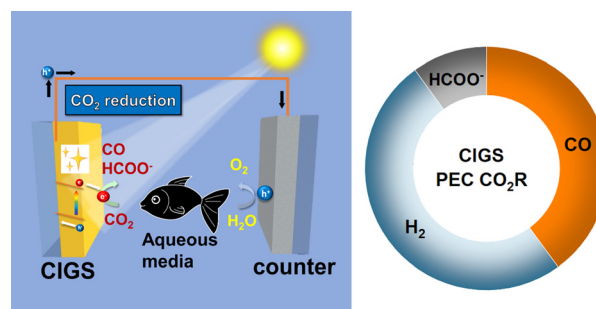
Bo Wu, Lakshmi Devi Voleti, Aidan Q. Fenwick, Chao Wu, Jiguang Zhang, Ning Ling, Meng Wang, Yuewen Jia, Weng Weei Tjiu, Mingsheng Zhang, Zainul Abidin, Shibo Xi, Channamallikarjun S. Mathpati, Sui Zhang, Harry A. Atwater, Iftekhhar A. Karimi and Yanwei Lum*



327

Origin of photoelectrochemical CO₂ reduction on bare Cu(In,Ga)S₂ (CIGS) thin films in aqueous media without co-catalysts

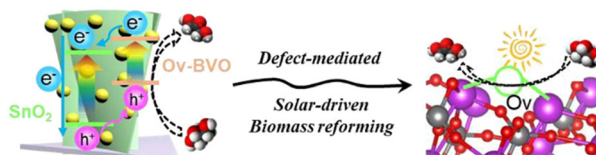
Rajiv Ramanujam Prabhakar, Sudhanshu Shukla,* Haoyi Li, R. Soyoun Kim, Wei Chen, Jérôme Beaudelot, Jan D'Haen, Daniely Reis Santos, Philippe M. Vereecken, Gian-Marco Rignanese, Ethan J. Crumlin, Junko Yano, Bart Vermang and Joel W. Ager III*



337

Vacancy-engineered bismuth vanadate for photoelectrocatalytic glycerol oxidation with simultaneous hydrogen production

Haoyue Sun, Rui Tang, Lizhuo Wang, Yuhang Liang, Wenjie Yang, Zhisheng Lin, Xingmo Zhang, Kaijuan Chen, Weibin Liang, Shenlong Zhao, Rongkun Zheng* and Jun Huang*



347

Correction: High performance acidic water electrooxidation catalysed by manganese–antimony oxides promoted by secondary metals

Sibimol Luke, Manjunath Chatti, Darcy Simondson, Khang N. Dinh, Brittany V. Kerr, Tam D. Nguyen, Gamze Yilmaz, Bernt Johannessen, Douglas R. MacFarlane, Aswani Yella,* Rosalie K. Hocking* and Alexandr N. Simonov*

