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Sustainable Energy & Fuels

Interdisciplinary research for the development of sustainable energy technologies

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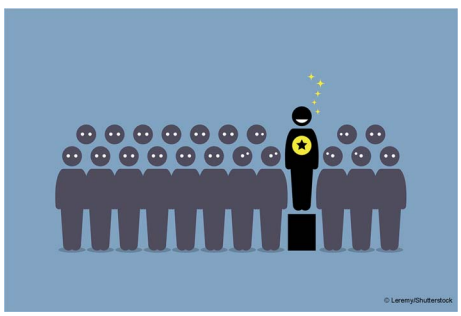
Cover
See Obadiah G. Reid, Garry Rumbles *et al.*, pp. 3796–3807. Image reproduced by permission of Mary "Max" M. O'Connor from *Sustainable Energy Fuels*, 2025, **9**, 3796. Molecules by Ben Mills via Wikimedia Commons.

EDITORIAL

3753

Outstanding Reviewers for *Sustainable Energy & Fuels* in 2024

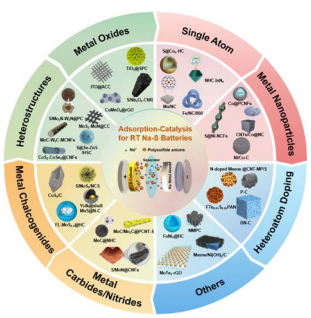


REVIEW

3754

Integrated adsorption–catalysis design enabling high-performance sodium–sulfur batteries

Xinghao Zhang, Wanjie Gao, Yufan Chen, Yi Peng, Xi Liu, Xiaohu Yang, Xiaosong Xiong, Jie Wang, Yang Liu, Ao Jia, Yinxu Lu, Yuping Wu and Jiarui He*



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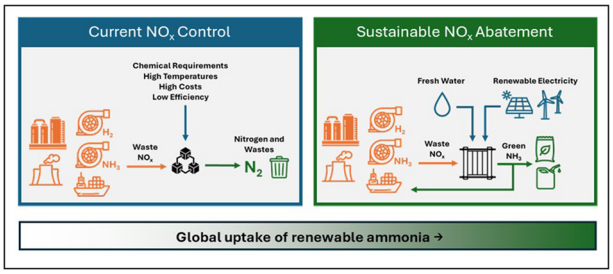
PERSPECTIVE

3780

Navigating the challenges of global NO_x emissions throughout the energy transition: state of play and outlook

Josh Leverett, William Hadinata Lie, Muhammad Haider Ali Khan, Zhipeng Ma, Rahman Daiyan* and Rose Amal*

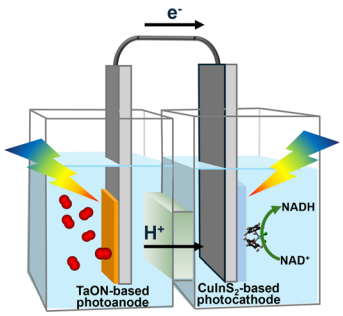


COMMUNICATION

3791

Unassisted visible-light–driven NADH regeneration based on a dual-photoelectrode system

Koya Kano, Masanobu Higashi* and Yutaka Amao*



PAPERS

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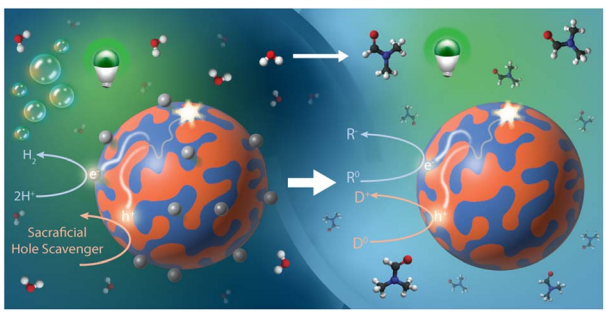
Polymer nanoparticle photocatalysts realized in non-aqueous solvents

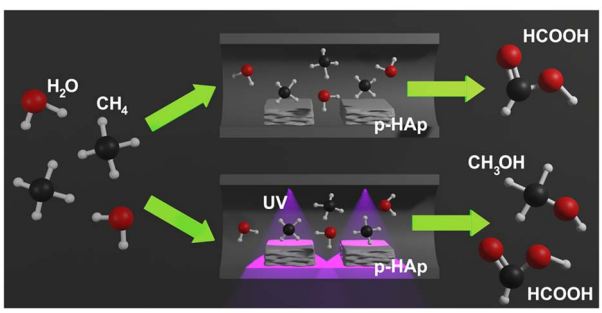
Max M. O'Connor, Steven C. Hayden, Melissa K. Gish, Justin L. Ratkovec, Lily H. Harmon, Yadong Zhang, Stephen Barlow, Seth R. Marder, Obadiah G. Reid* and Garry Rumbles*



3808

Sustainable oxidation of methane into formic acid using a polarized bioceramic under mild reaction conditions

Marc Arnau, Jordi Sans,* Pau Turon* and Carlos Alemán*



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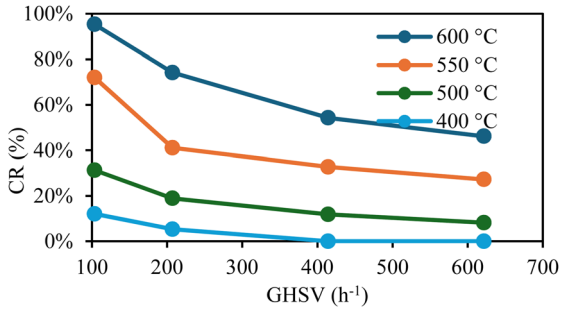

Experimental study on hydrogen-rich fuel generation *via* ammonia decomposition using a structured catalytic reactor

Payam Shafie,* Marie Mottoul, Alain DeChamplain and Julien Lepine

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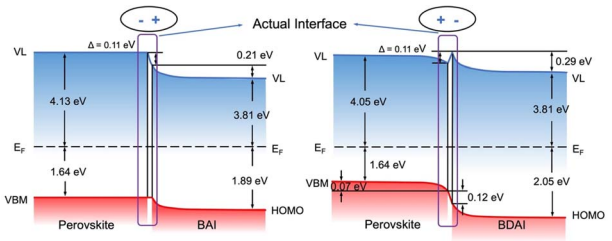

Dipole orientation-induced interfacial energy level alignment difference in 2D perovskite passivated 3D perovskite by *in situ* investigation

Ruifeng Zheng, Jielei Li, Shengwen Li,* Bingchen He and Shi Chen*

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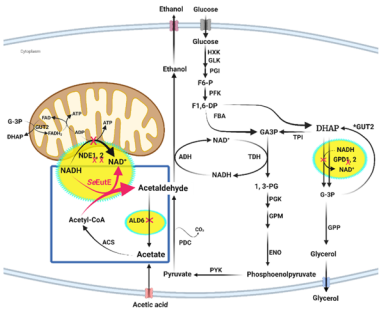

Engineering a hypoxia-tolerant *Saccharomyces cerevisiae* for rapid ethanol production *via* co-utilization of glucose and acetic acid and redox-enhanced flocculation

Sadat Mohamed Rezk Khattab,* Mohammed Oksh Mohammed Mousa, Takashi Nagata, Takashi Watanabe and Masato Katahira*

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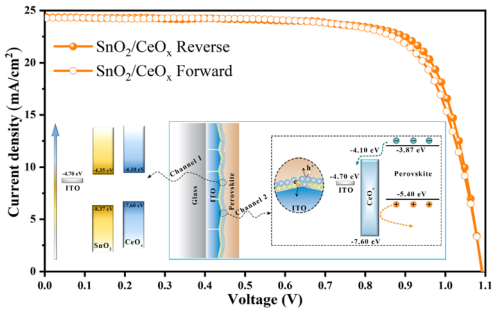

Optimization of a SnO_2-based electron transport layer using cerium oxide for efficient and stable perovskite solar cells

Zhipeng Liu, Zhiwei Gu, Yang Lv, Zhiqin Su, Jian Sun, Linlin Qiu* and Pingfan Du*

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PAPERS

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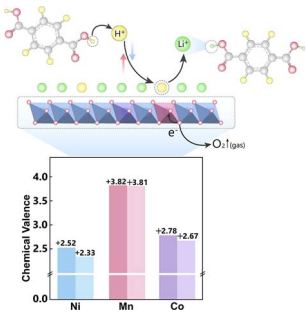
Ultra-high efficient lithium recovery *via* terephthalic acid from spent lithium-ion batteries

Jiahui Hou, Zexin Wang, Zifei Meng, Jinzhao Fu, Zeyi Yao, Wenting Jin, Xiaotu Ma, Zhenzhen Yang and Yan Wang*



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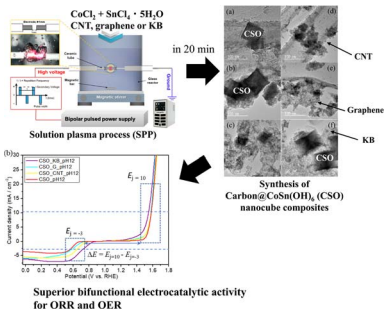
Single-step solution plasma synthesis of bifunctional $CoSn(OH)_6$–carbon composite electrocatalysts for oxygen evolution and oxygen reduction reactions

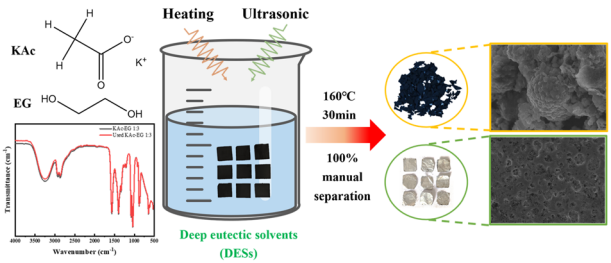
Sangwoo Chae, Akihito Shio, Taketo Imamura, Kouki Yamamoto, Yuna Fujiwara, Gasidit Panomsuwan and Takahiro Ishizaki*



3889

Characterization of thermal mass transfer in the separation process of electrode materials from spent lithium-ion batteries using deep eutectic solvents

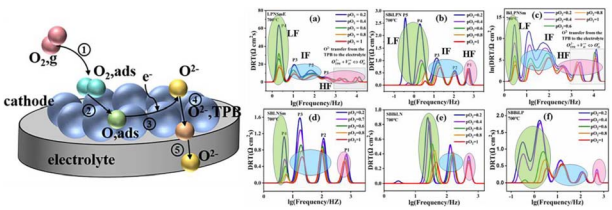
Xiaoxia Wang, Mengmeng Sun, Yu Qiao* and Zhonghao Rao*



3900

A-site composition engineering in high-entropy $AFeO_3$ perovskite SOFC cathodes and unraveling oxygen reduction mechanisms

Zepeng Li,* Yanfeng Ge, Weilin Jia, Mingrun Du, Xueting Yi, Yu Ma, Jingya Wang, Bo Liu, Yuan Li and Huanbin Li



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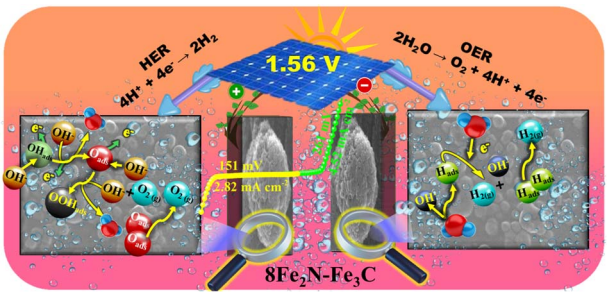

Exceptional intrinsic bifunctional performance of Fe_2N–Fe_3C heterostructure and STH efficiency

Mayakrishnan Raj kumar, Dhanasingh Thiruvengadam, Kaliyamoorthy Santhosh kumar, Kuppusamy Rajan, Jayaraman Jayabharathi* and Manoharan Padmavathy

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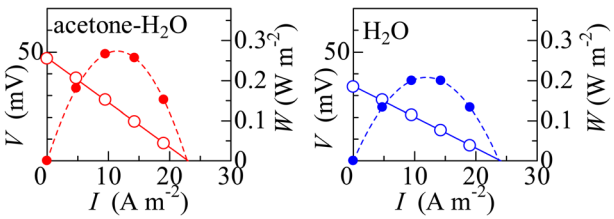

A liquid thermoelectric converter composed of acetone–water mixed solution with reduced solution resistance

Haruka Yamada, Touya Aiba and Yutaka Moritomo*

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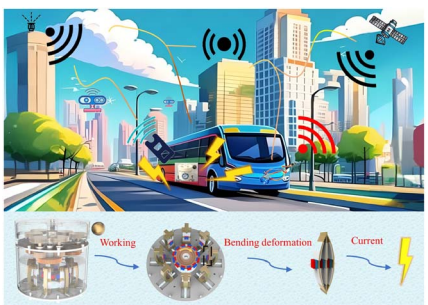

Design and investigation of a magnetic coupling piezoelectric inertial energy harvesting system for low-power wireless sensors in intercity buses

Zhen Zhao, Xiaohui Zhang, Baifu Zhang,* Haichuan Cui, Xinjun Li and Enyu He

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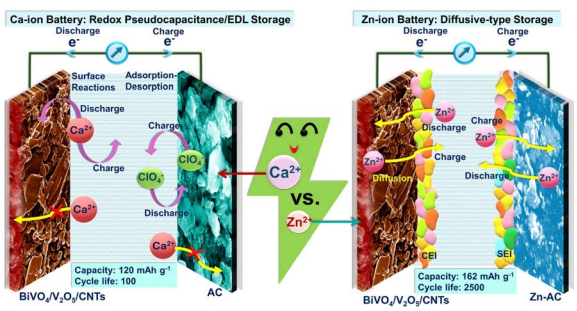

$BiVO_4/V_2O_5$ heterostructures for durable and highly reversible calcium- and zinc-ion batteries

Danish Wazir, Souvik Naskar, Priya R. Sharmesh, Partha Ghosal and Melepurath Deepa*

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