

Sustainable Energy & Fuels

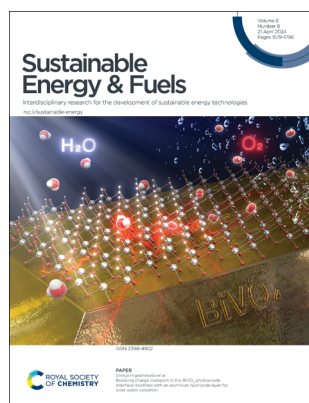
Interdisciplinary research for the development of sustainable energy technologies

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ISSN 2398-4902 CODEN SEFUA7 8(8) 1579–1796 (2024)



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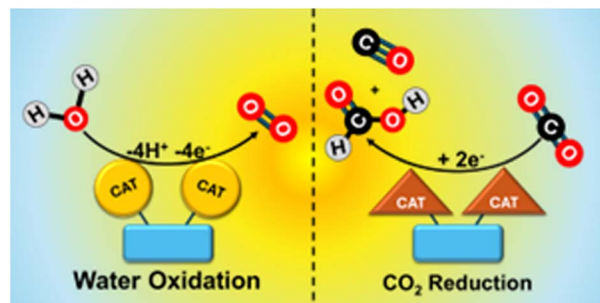
See Shinya Higashimoto et al., pp. 1626–1635. Image reproduced by permission of Shinya Higashimoto from *Sustainable Energy Fuels*, 2024, 8, 1626.

REVIEWS

1588

Multinuclear systems for photo-induced production of green fuels: an overview of homogeneous catalysts based on transition metals

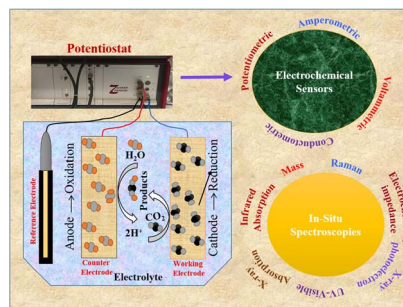
Alessandro Amadeo, Emanuele La Mazza, Antonino Arrigo, Giuseppina La Ganga and Ambra M. Cancelliere*



1607

A brief review of *in situ* spectroscopic methods and electrochemical sensors as essential evaluation tools for the electrochemical reduction of CO₂ (EIRC)

V. S. K. Yadav,* Mohammed A. H. S. Saad, Mohammed J. Al-Marri and Anand Kumar*



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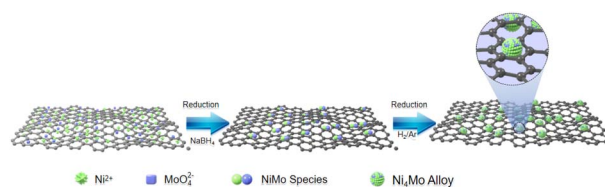
Fundamental questions
Elemental answers

COMMUNICATION

1619

Alloying Ni₄Mo for efficient alkaline hydrogen oxidation and hydrogen evolution reactions

Pengfei Cao, Xinxin Zhang, Lei Wang* and Honggang Fu*

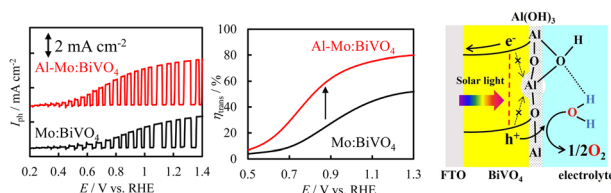


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1626

Boosting charge transport in the BiVO₄ photoanode interface modified with an aluminum hydroxide layer for solar water oxidation

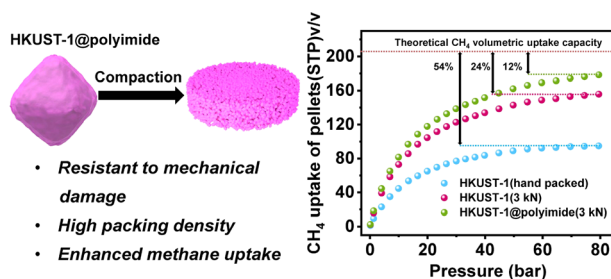
Waka Matsumoto, Takashi Fukushima, Satoshi Heguri, Syuji Fujii and Shinya Higashimoto*



1636

Polymer coating assisted shaping of metal–organic framework particles into pellets with enhanced methane uptake

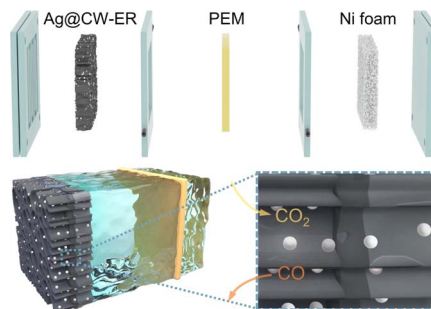
Chunhui Wu,* Xinxin Chu, Dejun Dai, Xiaoling Wu, Dongxu Wang, Yu Tao, Yue-Biao Zhang and Tao Li*



1641

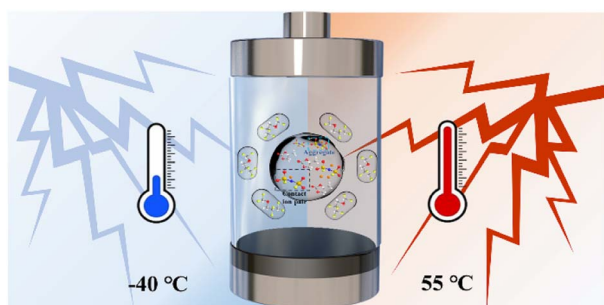
An integrated carbonized wood-based gas-diffusion electrode for high-current-density CO electrosynthesis in flow cells

Huanhuan Tao, Huaiyu Chang, Fang Wang, Zhengguo Zhang and Shixiong Min*



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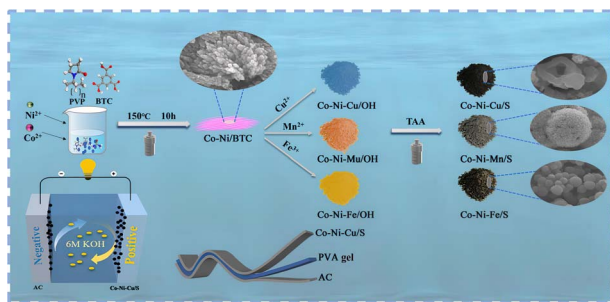
1650



Novel propylene carbonate based localized high concentration electrolyte with high voltage, flame retardant and wide temperature characteristics enables excellent electrochemical performances of lithium metal batteries

Pan Luo, Ying Zhang, Jialin Song, Mingshan Wang, Junchen Chen, Bo Yu, Bingshu Guo, Zhiyuan Ma, Liang Li and Xing Li*

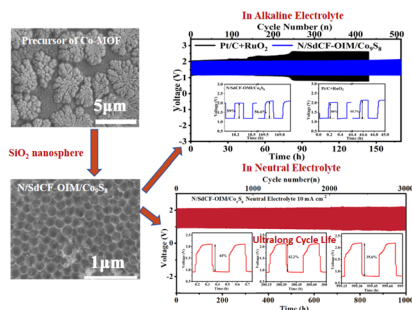
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Ion etching modulates the synthesis of CoNiCu sulfide for high-performance supercapacitors

Hao Wu, Jie Zhu, Guoxiang Wang,* Qingwang Min, Boyan Ai, Pengchao Liang, Rui Yuan and Dahui Fang

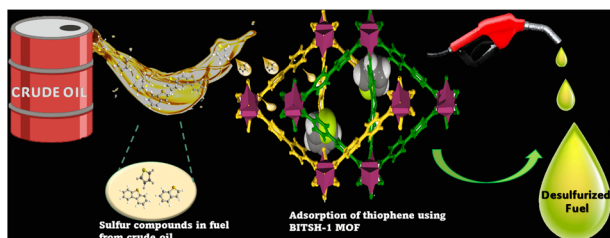
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Synergistic action of highly-active porous carbon-based bifunctional electrocatalysts and neutral electrolyte: endowing zinc–air batteries with ultra-long cycle stability

Juanjuan Zhao, Xiaohang Ma,* Lingyun Liu, Weiguang Fang, Zhenfa Zi* and Mingzai Wu*

1679



Cobalt-based metal–organic framework for desulfurization of thiophene as a model fuel

M. Christina Nilavu, T. Leelasree, Himanshu Aggarwal* and N. Rajesh*

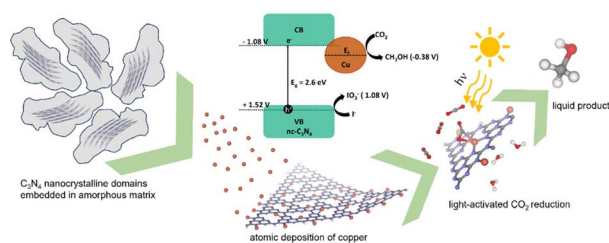


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Synergy of nanocrystalline carbon nitride with Cu single atom catalyst leads to selective photocatalytic reduction of CO₂ to methanol

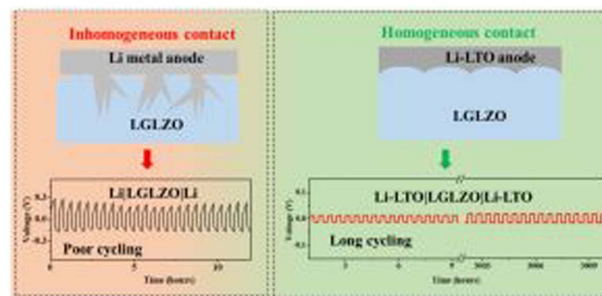
Tara M. LeMercier, Madasamy Thangamuthu,* Emerson C. Kohlrausch, Yifan Chen, Craig T. Stoppiello, Michael W. Fay, Graham A. Rance, Gazi N. Aliev, Wolfgang Theis, Johannes Biskupek, Ute Kaiser, Anabel E. Lanterna, Jesum Alves Fernandes and Andrei N. Khlobystov*



1704

Highly stable all-solid-state batteries with Li–LTO composite anode

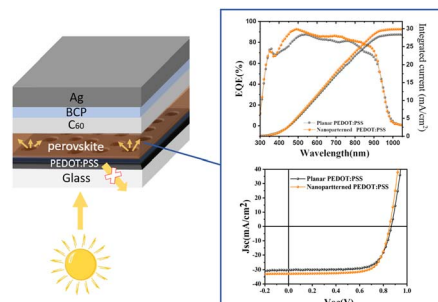
Thamayanthi Panneerselvam,* R. Murugan and O. V. Sreejith*



1712

Reducing optical reflection loss through textured PEDOT:PSS in hybrid Sn–Pb perovskite solar cells

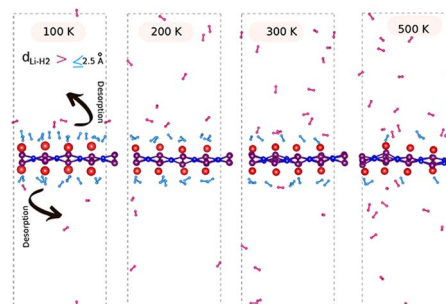
Shih-En Hsu, Wen-Xian Zhu, Dong-Tai Wu, Wen-Li Huang, Li-Ting Xue, Chi-Jing Huang, Chang-Hao Wang, Yun-Shan Li, Wei-Jia Qiu and Chieh-Ting Lin*



1719

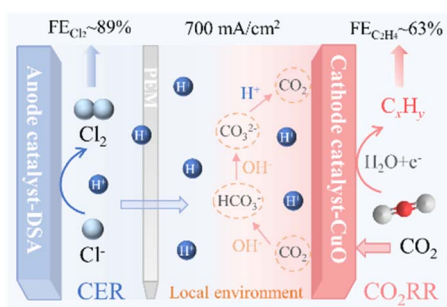
Lithium decorated 2D orthorhombic (o)-B₂X₂ monolayers for hydrogen storage: first principles calculations

Ayoub Benaddi,* Abdelali Elomrani, Mohammed Lamhani, Said Oukahou, Mohammad Maymoun, Mohamed Yassine Fatihi and Abdellatif Hasnaoui



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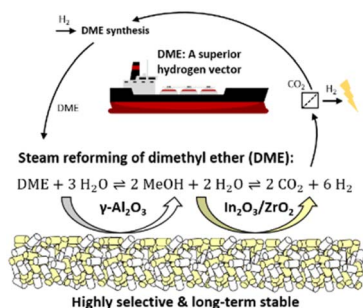
1730



Acidic chloride electrolyte mediates the high conversion ratio of CO₂-to-C₂H₄ and direct production of Cl₂

Caitao Kang, Chenglong Ding, Yao Li, Yanming Li, Changli Li* and Jingfu He*

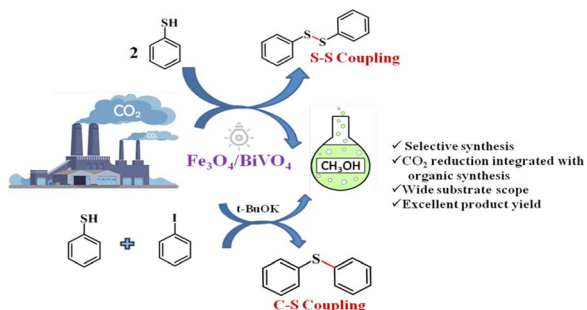
1740



A highly durable catalyst system for hydrogen production from dimethyl ether

Robert Stöber, Franziska Seidl, Emanuel Hoffmann, Peter Wasserscheid and Patrick Schühle*

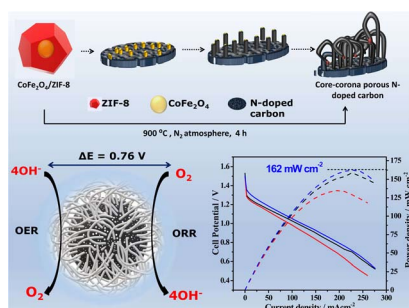
1750



Photocatalytic CO₂ reduction to methanol integrated with the oxidative coupling of thiols for S–X (X = S, C) bond formation over an Fe₃O₄/BiVO₄ composite

Nitish Saini, Sandhya Saini, Santanu Majumder,* Kyra Sedransk Campbell and Suman L. Jain*

1761



Active site exploration of core–corona structured bifunctional cobalt ferrite-containing nitrogen-doped carbon nanotubes for rechargeable zinc–air battery application

Shankar Baskaran, E. A. Anook Nazer and Azhagamuthu Muthukrishnan*

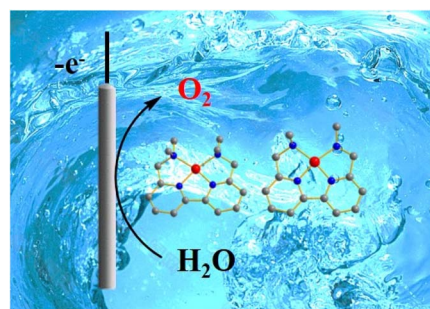


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Efficient electrochemical water oxidation catalyzed by N_4 -coordinated nickel complexes under neutral conditions

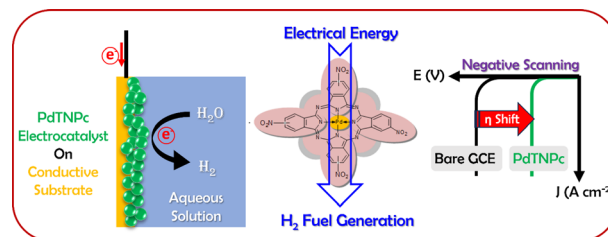
Zhijun Ruan, Jinfeng Dong, Jieying Wang, Zhichao Qi, Xiaoli Chen,* Xiangming Liang* and Junqi Lin*



1775

Tuning a palladium(II) phthalocyanine embedded hybrid electrocatalyst for the hydrogen evolution reaction

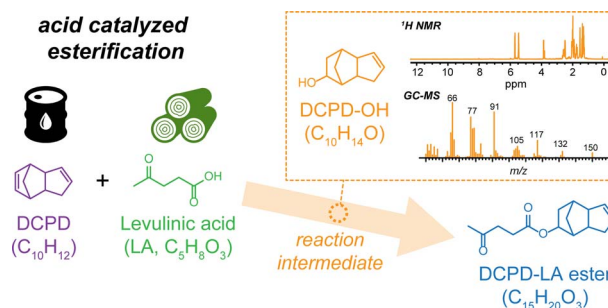
Sowmyashree Hadimane, Shambhulinga Aralekallu and Lokesh Koodlur Sannegowda*



1788

Solid acid catalyzed esterification of dicyclopentadiene with organic acids to bio-based functional monomers

Sang-Ho Chung, Marilena Demetriou, Hongqi Wang and N. Raveendran Shiju*



CORRECTION

1793

Correction: Enhanced photoelectrochemical hydrogen production *via* linked BiVO_4 nanoparticles on anodic WO_3 nanocoral structures

Eunoak Park, JeongEun Yoo* and Kiyoun Lee*

