

Sustainable Energy & Fuels

Interdisciplinary research for the development of sustainable energy technologies

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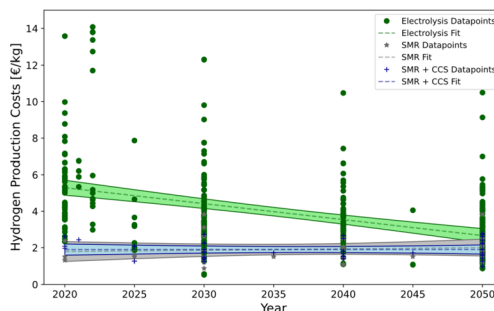
Cover
See Sabrina Spatari *et al.*, pp. 1924–1935. Image reproduced by permission of Sabrina Spatari from *Sustainable Energy Fuels*, 2024, 8, 1924.

REVIEWS

1806

Future costs of hydrogen: a quantitative review

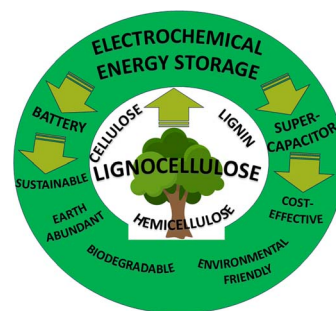
Florian Frieden* and Jens Leker



1823

Lignocellulosic biomass-based materials: a promising resource for viable energy storage

Md. Merajul Islam



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Fundamental questions
Elemental answers

REVIEWS

1872

Design and development of nanostructured photocatalysts for large-scale solar green hydrogen generation

Pratyush Kumar Sahu, Aslisha Champati, Abanti Pradhan* and Brundabana Naik*

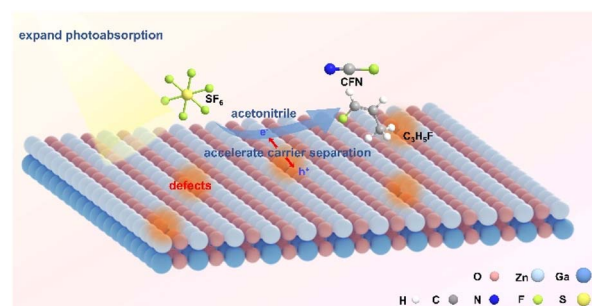


COMMUNICATION

1918

Boosted photoconversion of SF₆ over defective ZnGa₂O₄ nanosheets under mild conditions

Shan Zhu, Yue Zhao, Fengxiang Ma, Yue Yin, Weijia Shi, Feng Zhu, Wenya Fan, Peijin Du* and Jinyu Ding*

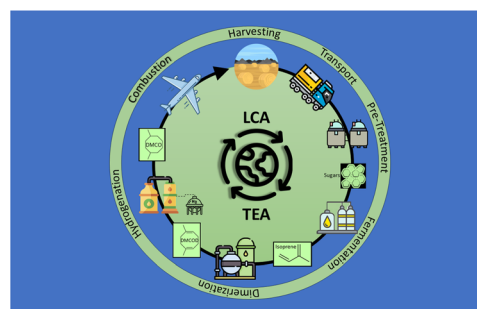


PAPERS

1924

A sustainable aviation fuel pathway from biomass: life cycle environmental and cost evaluation for dimethylcyclooctane jet fuel

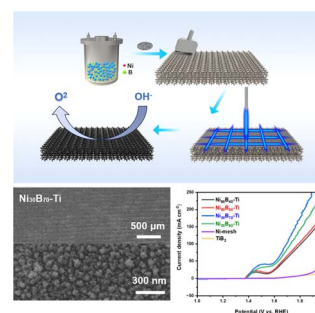
Rahamim Batten, Mukund Karanjikar and Sabrina Spatari*



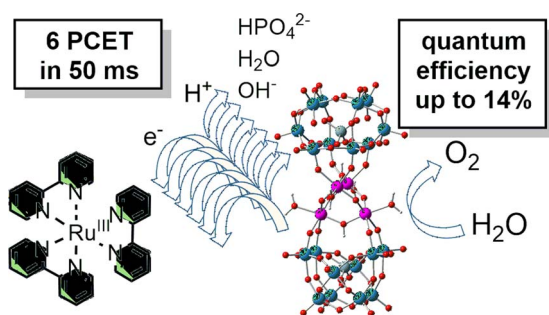
1936

A facile strategy of "laser-direct-writing" to develop self-supported Ni₃₀B₇₀-Ti catalysts for boosted and durable alkaline oxygen evolution

Yiming Gao, Shengli Zhu, Zhenduo Cui, Zhaoyang Li, Shuilin Wu, Zhonghui Gao, Wence Xu, Meiqing Guo, Yanqin Liang* and Hui Jiang*



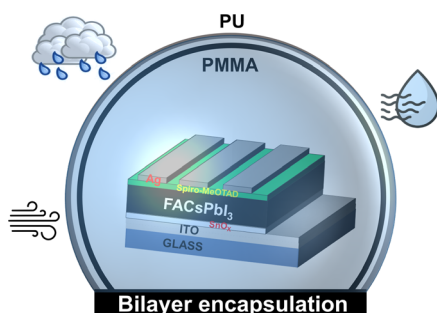
1944



Sequential proton coupled electron transfer events from a tetraruthenium polyoxometalate in photochemical water oxidation

Elena Rossin, Marcella Bonchio, Mirco Natali* and Andrea Sartorel*

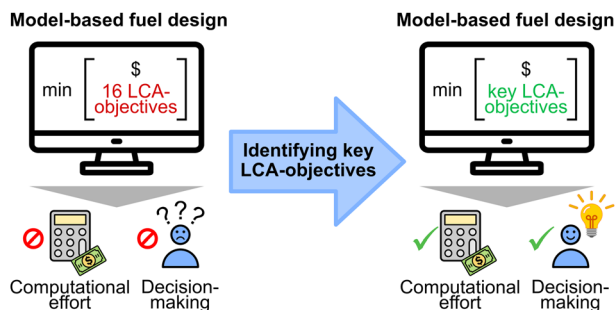
1953



Facile and scalable bilayer polymer encapsulation to achieve long-term stability of perovskite solar cells under harsh humidity conditions

Rohith Kumar Raman, Saraswathi Ganesan, Ananthan Alagumalai, Vidya Sudhakaran Menon, Suresh Krishnan, Senthil A. Gurusamy Thangavelu and Ananthanarayanan Krishnamoorthy*

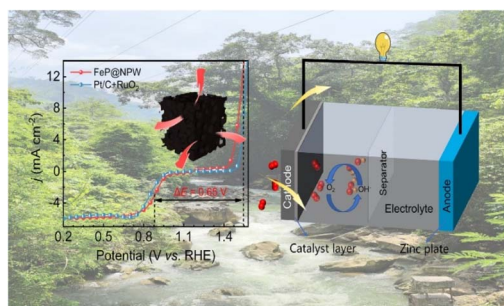
1966



Identifying key environmental objectives for integrated process and fuel design

Simon Voelker, Philipp Ackermann, Marcel Granderrath, Clemens Kortmann, Joern Viell, Alexander Mitsos and Niklas von der Assen*

1983



Chemical fabrication and synergistic mechanism of N-doped carbon modified with FeP as catalysts for flexible rechargeable Zn-air batteries

Xianli Wu, Ting Zhou, Guosheng Han, Shuling Liu, Mengmeng Cao, Shuqi Li, Jiawen Wang, Yanyan Liu,* Jianchun Jiang, Yongfeng Wang and Baojun Li



1992

Multi-period optimization of hydrogen refueling station layouts considering refueling satisfaction and hydrogen fuel cell vehicle market diffusion

Yan Zhou, Xunpeng Qin* and Wenlong Yang

Upper-level Planning: Multi-period HRS Location Optimization by the Decision-Maker

Objective: $\max\{\text{Vehicle flow intercepted by the HRS}\}$
 Decisions: (1) Number of HRSs constructed per period
 (2) Location of HRSs
 (3) Capacity of HRSs

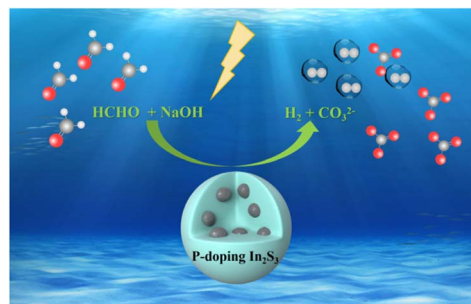
Lower-level Planning: Hydrogen Refueling Strategy

Objective: $\max\{\text{HFCV refueling satisfaction on all paths}\}$
 Decisions: (1) Hydrogen Refueling Strategy
 (2) Hydrogen Refueling Amount

2010

Phosphorus-doped In_2S_3 with rich sulfur vacancies toward efficient photocatalytic hydrogen production from formaldehyde solution

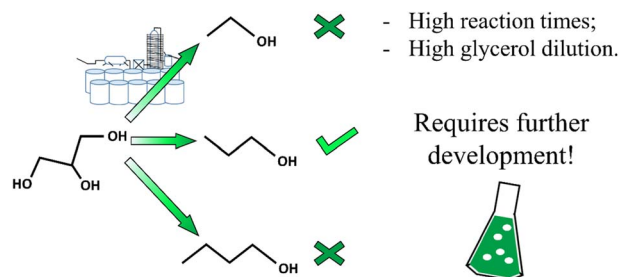
Jing Sui, Zhengxin Peng, Nan Lu, KaiCheng Qian, Xiaofan Zhang, Tong Wei, Renhong Li and Xiaoqing Yan*



2019

Biochemical production of short-chain alcohols from glycerol: process simulation and economic evaluation

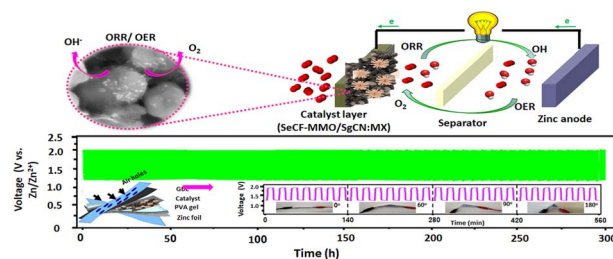
Lia G. M. Albuquerque, Raquel M. Cavalcante and André F. Young*



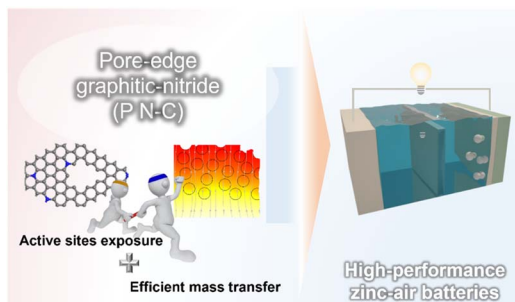
2038

Selenium-doped mixed metal oxide nanoparticles decorated on $\text{g-C}_3\text{N}_4$ and MXene sheets as promising bifunctional oxygen electrocatalysts for rechargeable Zn-air batteries

Mohadese Rastgoo-Deylami, Ali Esfandiar* and Valeri P. Tolstoy



2050

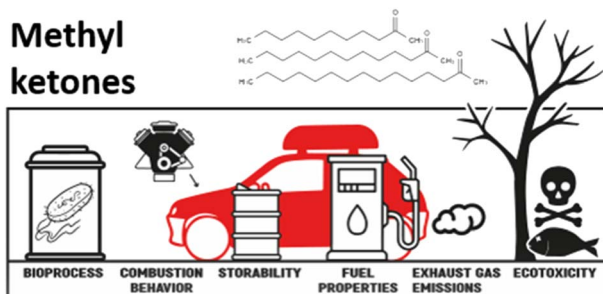


Pore-edge graphitic nitride-dominant hierarchically porous carbons for boosting oxygen reduction catalysis

Lilai Liu, Youzheng Wu, Hui Wang, Xueying Yang, Weirun Zhu, Shuanshan Ma, Xiangyu Lu, Yaqiang Li, Penghui Ren,* Peixia Yang* and Ruopeng Li*

2059

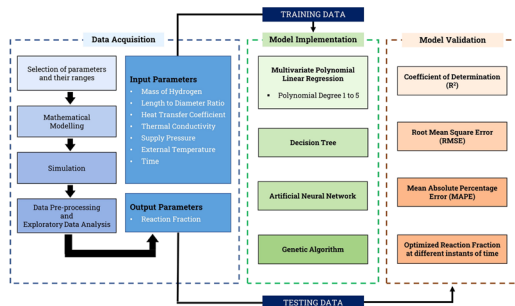
Methyl ketones



Methyl ketones: a comprehensive study of a novel biofuel

Carolin Grütering, Christian Honecker, Marius Hofmeister, Marcel Neumann, Lukas Raßpe-Lange, Miaomiao Du, Bastian Lehrheuer, Maximilian von Campenhausen, Franziska Schuster, Maximilian Surger, Birgitta E. Ebert, Andreas Jupke, Till Tiso, Kai Leonhard, Katharina Schmitz, Stefan Pischinger and Lars M. Blank*

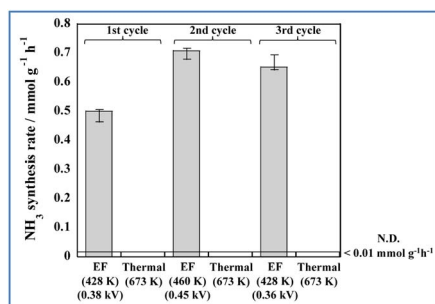
2073



Machine learning modelling and optimization for metal hydride hydrogen storage systems

Abhijit Kumar, Saurabh Tiwari,* Nandlal Gupta and Pratibha Sharma

2087



Air-stable iron phosphide catalysts for electric field-assisted low-temperature ammonia synthesis

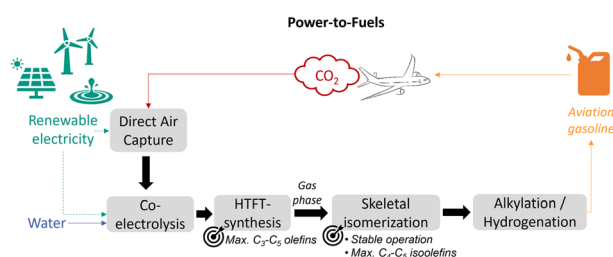
Ryuku Maeda, Hiroshi Sampei, Tomohiro Tsuda, Hiromu Akiyama, Yuta Mizutani, Takuma Higo, Hideaki Tsuneki, Takato Mitsudome* and Yasushi Sekine*



2094

Coupling the high-temperature Fischer–Tropsch synthesis and the skeletal isomerization reaction at optimal operation conditions in the Power-to-Fuels process route for the production of sustainable aviation gasoline

Dorela Dhamo,* Jannis Kühn, Simon Lüttin, Michael Rubin and Roland Dittmeyer



2104

Influence of Ru-substitution on the performance of pyrochlore catalysts in oxidative steam reforming of ethanol

Yu-Hsuan Huang, Ho-Chen Hsieh, Yun-Hsin Wang, Sheng-Feng Weng and Chi-Shen Lee*

