

Sustainable Energy & Fuels

Interdisciplinary research for the development of sustainable energy technologies

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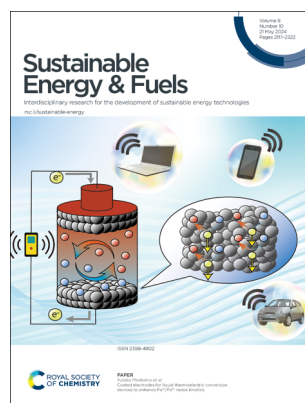
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Cover
See M. Veronica Sofianos *et al.*, pp. 2125–2137. Image reproduced by permission of M. Veronica Sofianos from *Sustainable Energy Fuels*, 2024, 8, 2125. Art by the team of INMYWORK Studio (<https://inmywork.com>).



Inside cover
See Yutaka Moritomo *et al.*, pp. 2138–2143. Image reproduced by permission of Yutaka Moritomo from *Sustainable Energy Fuels*, 2024, 8, 2138.

PAPERS

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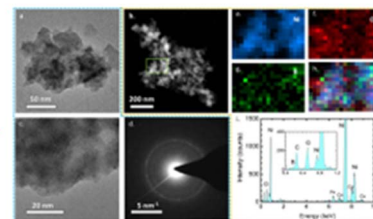
Engineering 2D nickel boride/borate amorphous/amorphous heterostructures for electrocatalytic water splitting and magnetism

Xu Lin, Vasileios Tzitzios, Qiancheng Zhang, Brian J. Rodriguez, Aran Rafferty, Raman Bekarevich, Michael Pissas and M. Veronica Sofianos*

one-pot chemical reduction method
NaBH₄ and NaOH



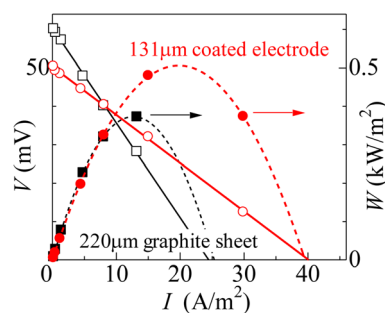
amorphous/amorphous nickel boride/borate heterostructures



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Coated electrodes for liquid thermoelectric conversion devices to enhance Fe²⁺/Fe³⁺ redox kinetics

Touya Aiba, Dai Inoue and Yutaka Moritomo*



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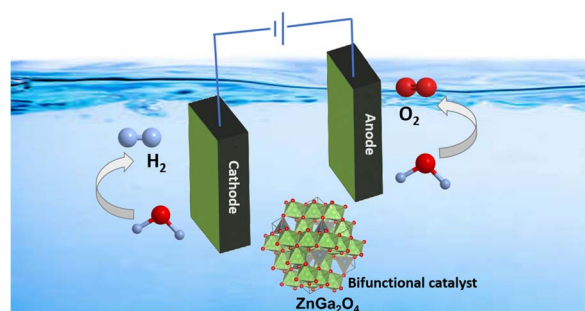


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Improved catalytic activity on transitioning from inverse to normal spinel in $Zn_{2-x}Ga_{2x}Sn_{1-x}O_4$: a robust bifunctional OER and HER electrocatalyst

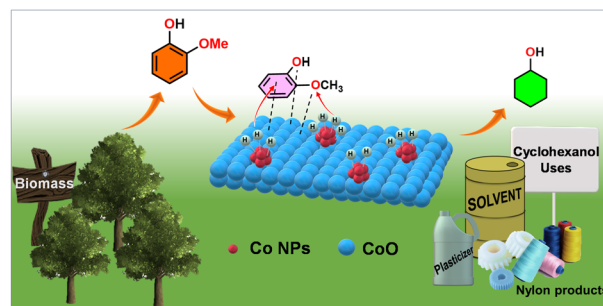
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The cooperative effect of Co and CoO in Co/CoO enabled efficient catalytic hydrogenation and demethoxylation of guaiacol to cyclohexanol

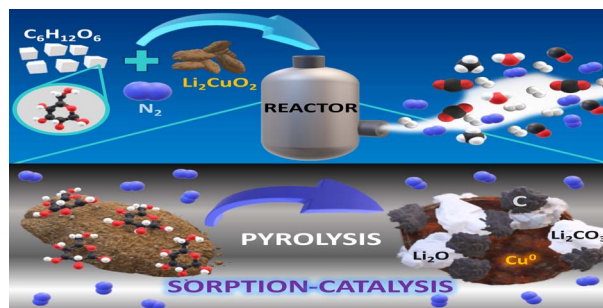
Bhupendra Pratap Singh, Ganesh Sunil More, Rajaram Bal and Rajendra Srivastava*



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Enhanced H_2 production through biomass pyrolysis by applying alkaline ceramic lithium cuprate (Li_2CuO_2) as a bifunctional material

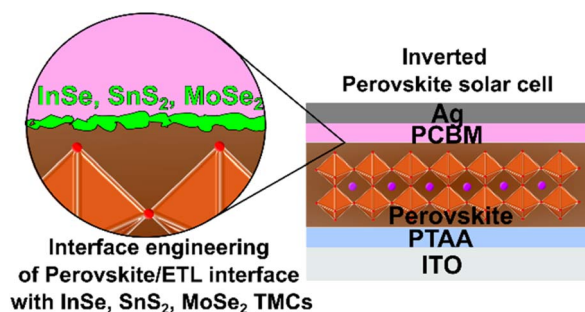
Fernando Plascencia-Hernández, Ana Yañez-Aulestia, Carlos Hernández-Fontes and Heriberto Pfeiffer*



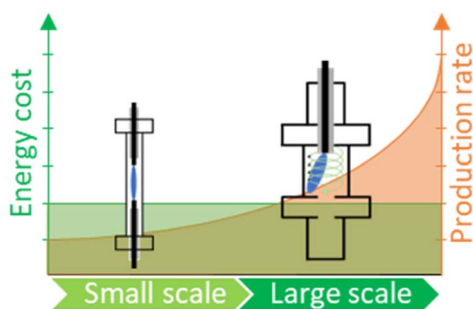
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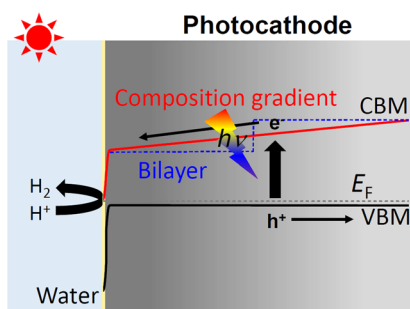
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Importance of geometric effects in scaling up energy-efficient plasma-based nitrogen fixation

Ivan Tsonev,* Hamid Ahmadi Eshtehardi,
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Lionel S. Veiga, Hiromu Kumagai, Masakazu Sugiyama
and Tsutomu Minegishi*

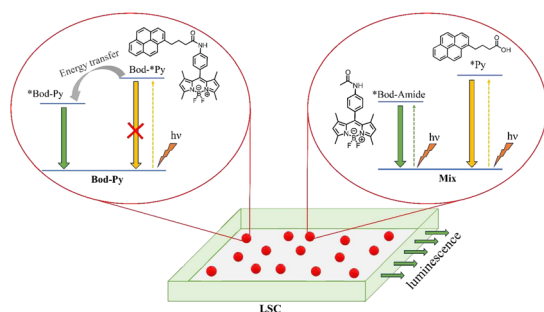
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A mesoporous Ta₂O₅/Nb₂O₅ nanocomposite with Lewis/Brønsted acid sites to enhance stepwise glucose conversion to 5-hydroxymethylfurfural

Sangeeta Mahala, Senthil Murugan Arumugam, Ravi
Kumar Kunchala, Bhawana Devi and Sasikumar Elumalai*

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Comparing a covalently linked BODIPY–pyrene system versus the corresponding physical mixture as chromophores in luminescent solar concentrators

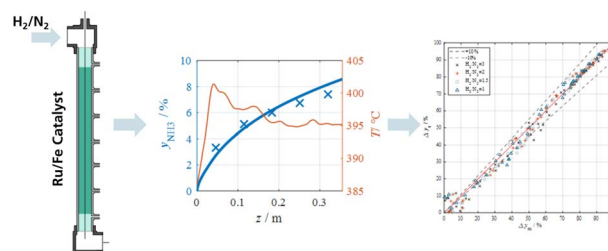
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Ambra M. Cancelliere, Antonio Santoro,
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Reaction kinetics for ammonia synthesis using ruthenium and iron based catalysts under low temperature and pressure conditions

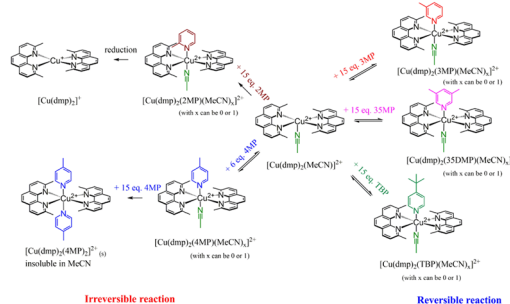
T. Cholewa,* B. Steinbach, C. Heim, F. Nestler, T. Nanba, R. Güttel* and O. Salem



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Investigation on the coordination between methylpyridine additives and the $[\text{Cu}(\text{dmp})_2]^{2+/+}$ redox couple and its improvement towards the stability of the dye-sensitized solar cells

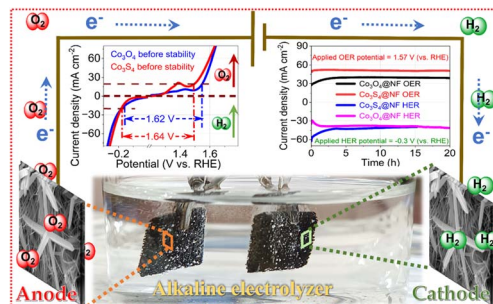
Vinh Son Nguyen, Kala Kannankutty, Yu-Hsuan Chen, Ding-Cheng Wang, Chen-Yu Yeh* and Tzu-Chien Wei*



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Enhanced bifunctional electrocatalytic activities of hybrid $\text{Co}(\text{OH})_2/\text{MOF}$ -derived materials for green hydrogen production by electrochemical water splitting

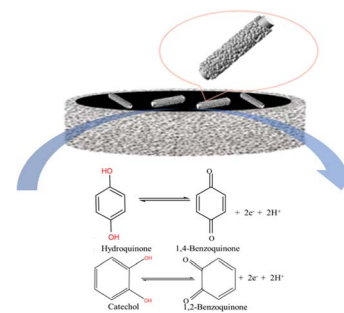
Apurba Borah, Sumit, Sathishkumar Palaniyappan and Gaddam Rajeshkhanna*



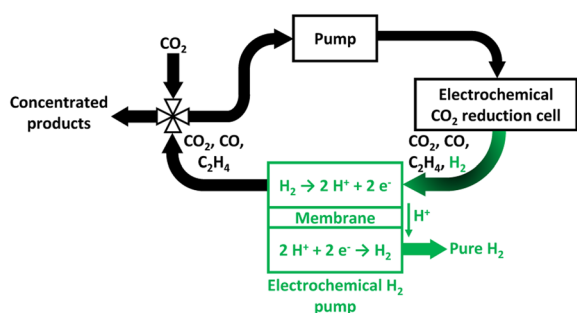
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Simultaneous detection of hydroquinone and catechol by Cu/Bi-MOF-derived Cu/Bi@C nanocomposites

Yuting Wu, Keru Cao, Jun Yan, Yuheng Zhang, Biao Zhang, Yanan Wang, Yong Yang, Dacheng Zhou, Qi Wang* and ChunXia Liu*



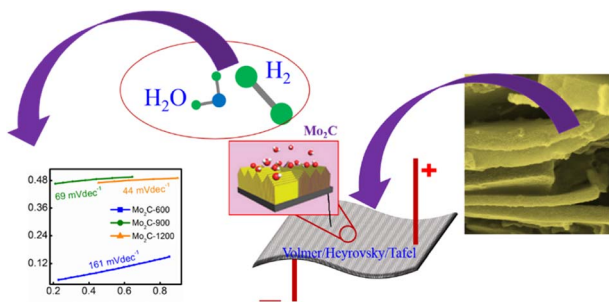
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A recirculation system for concentrating CO₂ electrolyzer products

Tobias A. Kistler, Rajiv Ramanujam Prabhakar and Peter Agbo*

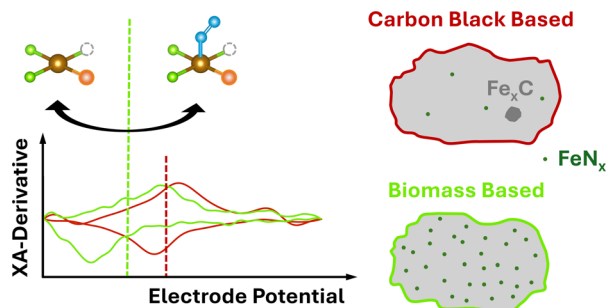
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Enhancement of the characteristics and HER activity of molybdenum carbide nanosheets for hydrogen evolution reaction

Muhammad Faisal Iqbal, Muhammad Idrees, Muhammad Imran, Aamir Razaq, Guanming Zhu, Jing Zhang,* Zahir Muhammad* and Meng Zhang*

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Operando X-ray absorption spectroscopy of Fe-N-C catalysts based on carbon black and biomass-derived support materials for the ORR

Garlef Wartner,* Julia Müller-Hülstede, Hanna Trzesniowski, Michael Wark, Peter Wagner and Robert Seidel*

