

Sustainable Energy & Fuels

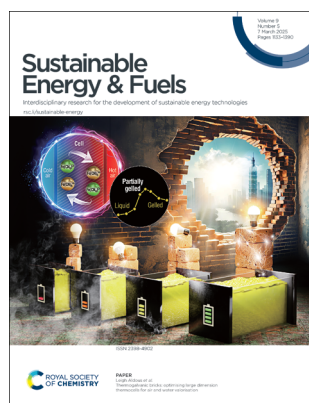
Interdisciplinary research for the development of sustainable energy technologies

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Inside cover
See Shintaro Yoshikawa and Yutaka Amao, pp. 1160–1164. Image reproduced by permission of Yutaka Amao from *Sustainable Energy Fuels*, 2025, 9, 1160.

PERSPECTIVE

1142

An intelligent battery management system (BMS) with end-edge-cloud connectivity – a perspective

Sai Krishna Mulpuri, Bikash Sah* and Praveen Kumar

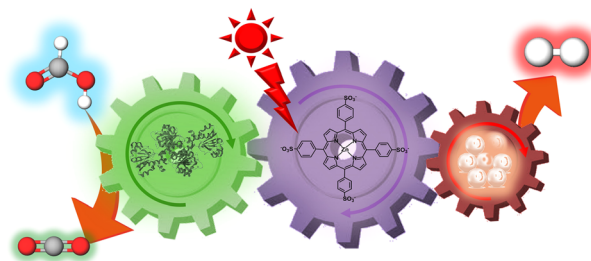


COMMUNICATION

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Visible-light responsive hydrogen production from formate with a photoredox system using enzymes and colloidal platinum nanoparticles

Shintaro Yoshikawa and Yutaka Amao*



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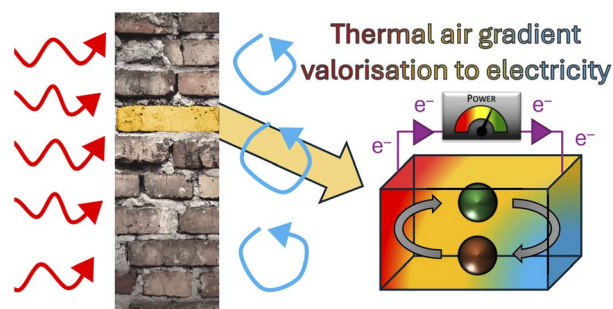
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Thermogalvanic bricks: optimising large dimension thermocells for air and water valorisation

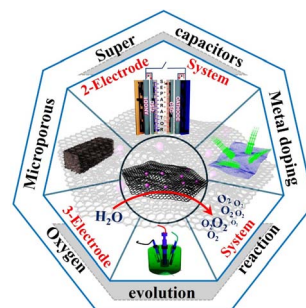
Rebecca Houghton-James, Sireenya Mesawang, Mark A. Buckingham, Robert Taylor, Patrick E. Phelan and Leigh Aldous*



1173

Elucidating the role of cobalt nanoparticles and Mn-phosphate in etched ZIF-67/phthalimide-NC and phthalimene oxide for supercapacitor and electrochemical oxygen evolution reaction applications

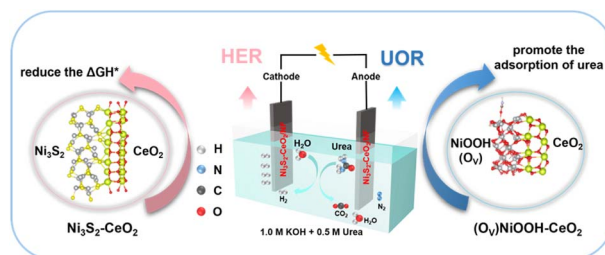
Tapan Dey, Nitish Kumar, Rahul Patil, Prakash Kumar Pathak, Sudip Bhattacharjee, Praveen Yadav, Asim Bhaumik, Rahul R. Salunkhe* and Saikat Dutta*



1183

CeO₂-enhanced surface reconstruction of Ni₃S₂ nanosheets for improved urea-assisted water splitting performance

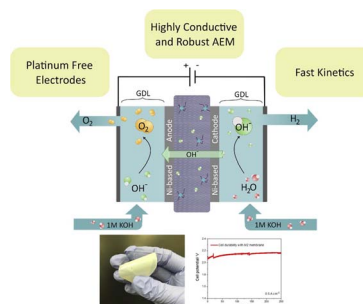
Jiale Shang, Tong Wei, Xiaoqing Yan, Zheng Fang, Leilei Du, Jichao Shi, Fozia Sultana,* Tongtong Li* and Renhong Li*



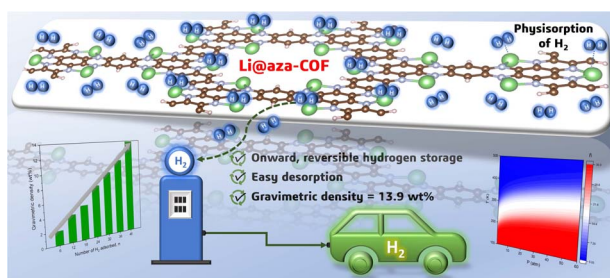
1196

Hydroxyl-conductive 2D hexagonal boron nitrides for anion exchange membrane water electrolysis and sustainable hydrogen production

Jasneet Kaur,* Matthew Schweinbenz, Kane Ho, Adel Malekkhouyan, Kamal Ghotia, Franz Egert, Fatemeh Razmjooei,* Syed Asif Ansar and Hadis Zarrin*



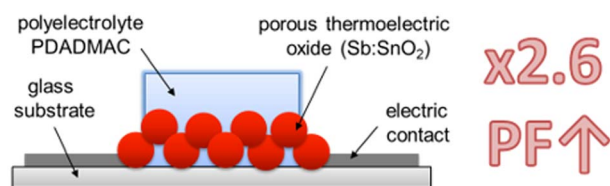
1207



Li-doped 2D aza-fused covalent organic framework: a promising avenue for hydrogen storage

Preeti Beniwal and T. J. Dhillip Kumar*

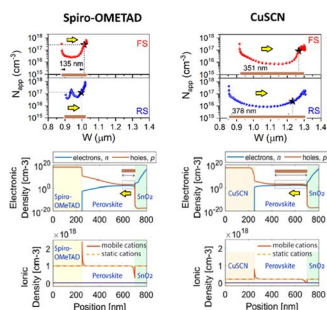
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Poly(diallyldimethylammonium)-based solid electrolytes to significantly enhance the power factor of a thermoelectric oxide film (Sb-doped SnO₂)

M. Solis-de la Fuente, S. Castro-Ruiz, L. Márquez-García, P. Rullière, S. Fantini, R. Del Olmo, N. Casado and J. García-Cañadas*

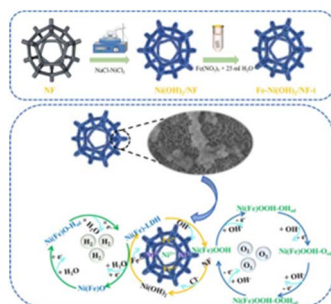
1225



Impact of the hole transport layer on the space charge distribution and hysteresis in perovskite solar cells analysed by capacitance–voltage profiling

E. Regalado-Pérez,* Evelyn B. Díaz-Cruz and J. Villanueva-Cab*

1236



Low-temperature etch synthesis of Fe-doped Ni(OH)₂ for enhanced bifunctional water splitting

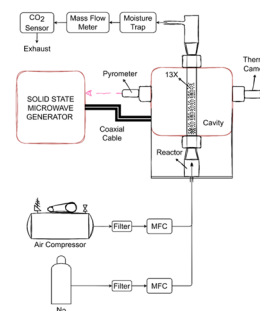
Yanmei Xin, Xiaoru Dou, Qiling Yan, Ruiting Zhang, Shuaishuai Li,* Guoan Huang* and Zhonghai Zhang*



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An experimental study on microwave-assisted direct air capture of CO₂ under fluidized bed conditions

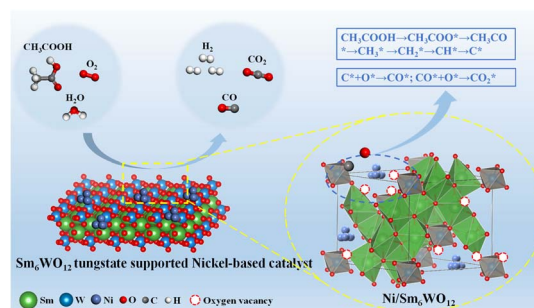
Mustafa Erguvan,^{*} Rahim Boylu, Matheus Strobel and Shahriar Amini^{*}



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Sm₆WO₁₂ tungstate supported nickel-based catalysts with enhanced resistance to coking and oxidation in auto-thermal reforming of acetic acid

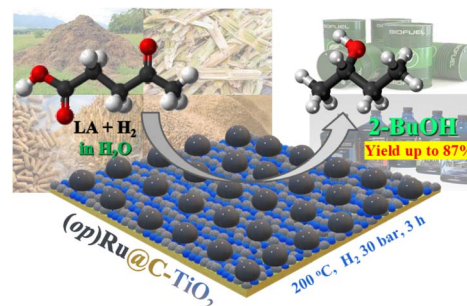
Xuemei Xie, Yingchun Xu, Mao Gan, Ying Su, Jinbo Liu and Lihong Huang^{*}



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Thermocatalytic synthesis of 2-butanol from biomass-derived levulinic acid using carbon-doped titania-supported ruthenium

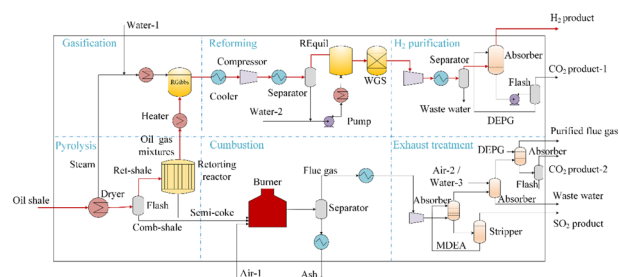
Atina Sabila Azzahra, Rodiansono,^{*} Iryanti Fatyasari Nata, Kiky Corneliasari Sembiring, Indri Badria Adilina and Ahmad Afandi



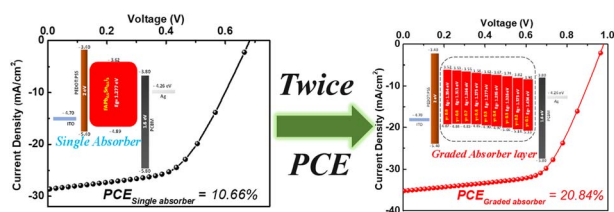
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Complete hydrogen production from oil shale with carbon capture

Pu Zheng, Xiaoxiang Wang, Dandan Li, Zhongmin Wu, Weijia Huang, Yun Li, Jie Zhang and Xiaohui Chen^{*}



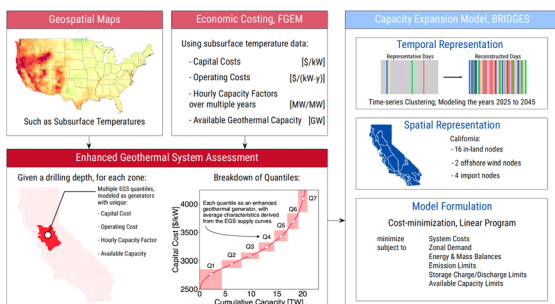
1305



Theoretical estimation to double the performance of perovskite solar cells using a graded absorber layer

Monisha Nayak, Abu Jahid Akhtar and Sudip K. Saha*

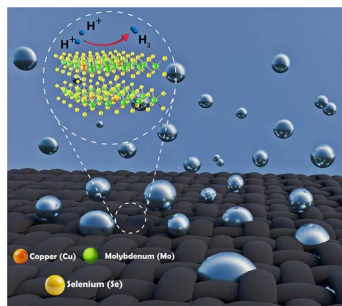
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The value of enhanced geothermal systems for the energy transition in California

Mohammad J. Aljubran,* Dimitri M. Saad, Mo Sodwatana, Adam R. Brandt and Roland N. Horne

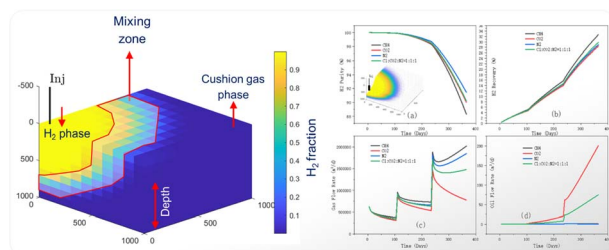
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Triggering the phase transition of molybdenum diselenide (MoSe₂) 1T@2H by introducing copper (Cu⁺): experimental insights and DFT analysis for the hydrogen evolution reaction

Gautham Kumar G, P. Balaji Bhargav,* C. Balaji and Shobana Priyanka D

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A sensitivity study of hydrogen mixing with cushion gases for effective storage in porous media

Junhan Lu, Nasiru Salahu Muhammed, Jude A. Okolie and Emmanuel I. Epelle*

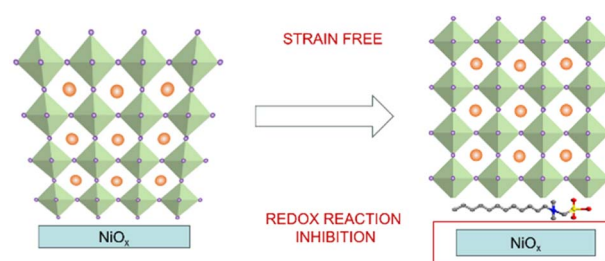


PAPERS

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Surface engineering to mitigate compressive stress and detrimental reactions in NiO_x-based inverted perovskite solar cells

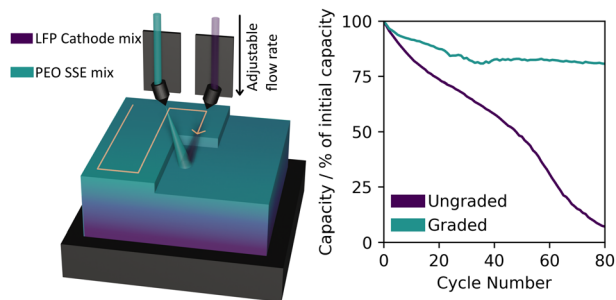
Zijin Qiao, Hongye Dong, Guibin Shen, Xiangning Xu, Wang Yao and Cheng Mu*



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Enhancing solid-state battery performance with spray-deposited gradient composite cathodes

Matt P. Tudball, Will J. Dawson, Joshua H. Cruddos, Francesco Iacoviello, Andrew R. T. Morrison, Alexander J. E. Rettie and Thomas S. Miller*



CORRECTION

1387

Correction: 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*

