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See Mikhail V. Polynski and Sergey M. Kozlov, pp. 660–672. Image reproduced by permission of Tatiana Savina from *EES Catal.*, 2026, 4, 660.



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See Zhiqun Lin, Dong Ha Kim *et al.*, pp. 502–521. Image reproduced by permission of Dong Ha Kim from *EES Catal.*, 2026, 4, 502.

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EES Catalysis 2025 Outstanding Papers

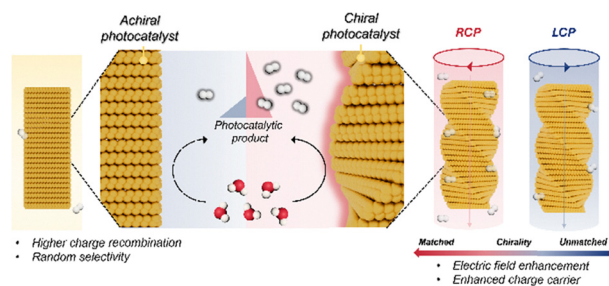


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Harnessing chirality in nanomaterials: advancing photocatalysis for hydrogen production and beyond

Nur Aqlili Riana Che Mohamad, Dong-Il Won, Haeun Kang, Jeongwon Kim, Kyunghye Chae, Minju Kim, Mingyue Zhang, Zhiqun Lin* and Dong Ha Kim*



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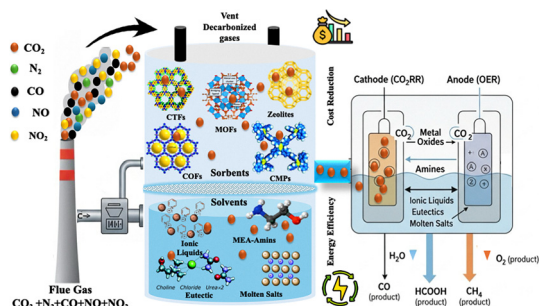
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REVIEWS

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Integrated CO₂ capture and conversion: dual-functional materials, mechanisms, and pathways to industrial decarbonization

Mohamed A. Elok, Ahmed G. Ali, Abdelrahman M. Abdelmohsen, Ahmed A. Taha, Abdelrahman A. Ashour, Salma Elshabrawy and Nageh K. Allam*

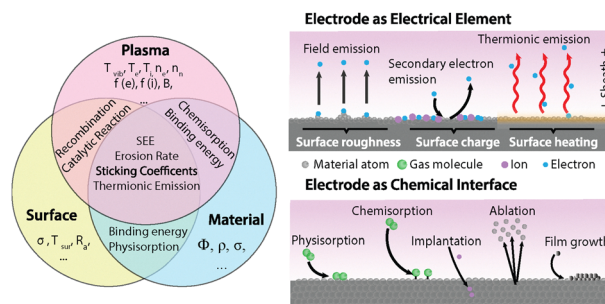


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Are plasma discharges really “catalyst-free”?

Thuy Vy Le, C. Buddie Mullins and Thomas C. Underwood*

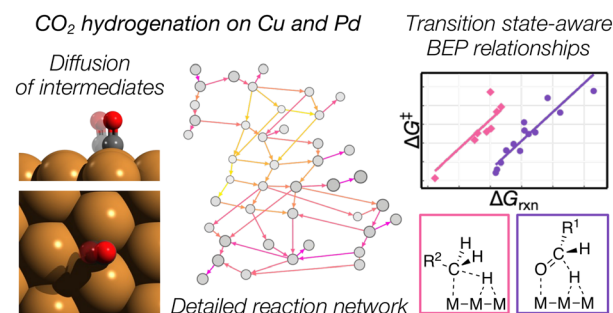


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Reaction network of CO₂ hydrogenation into C₁₋₂ oxygenates and its BEP relationships

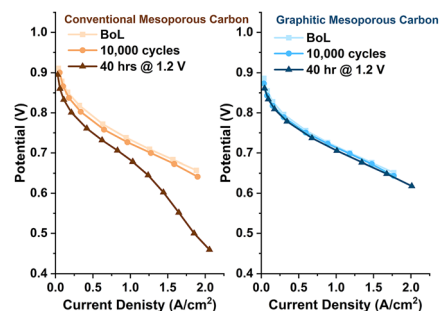
Mikhail V. Polynski and Sergey M. Kozlov*



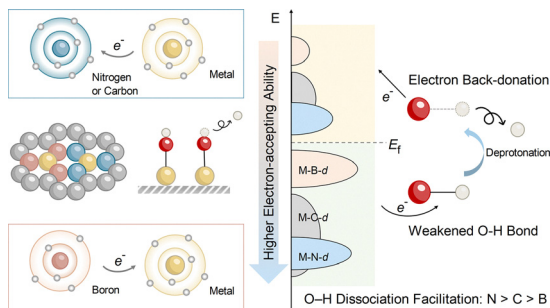
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Corrosion-resistant mesoporous carbon allowing for durable, high-performance hydrogen fuel cells for heavy-duty vehicle applications

Marwa Atwa,* Sara Pedram, Shicheng Xu, Samuel Dull, Yunha Jung, Takeharu Yoshii, Ruohong Sui, Rong Xu, Robert Marriott, Hiroto Nishihara, Jonathan E. Mueller, Marco Wiethop, Sebastian Kirsch, Gerold Huebner, Vedran Glavas, Jasna Jankovic, Thomas F. Jaramillo* and Fritz B. Prinz*



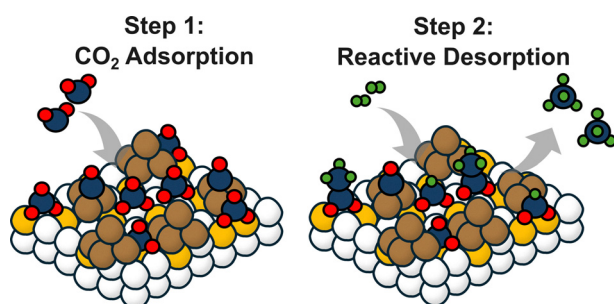
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Spatially extended asymmetry directs electron transfer and modulates water oxidation deprotonation behavior on dual-atom catalysts

Jixuan Yang, Yaxin Cheng, Hao Ma, Zirui Wang, Ting Wang and Yuanmiao Sun*

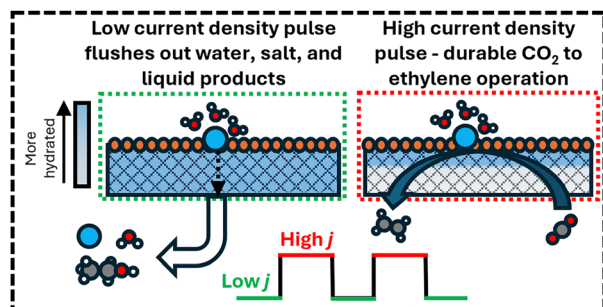
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Identifying mechanistic differences between co-fed CO₂ hydrogenation and reactive CO₂ capture using Ru and Pd dual function materials

Chae Jeong-Potter,* Neha Mehra, Carrie A. Farberow and Daniel A. Ruddy*

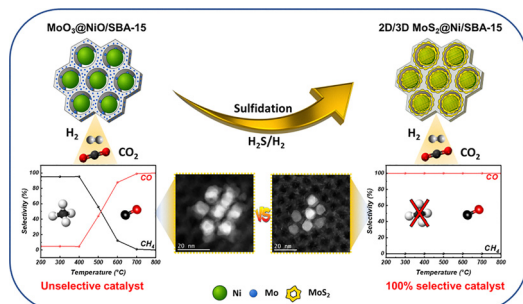
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Low-frequency electrochemical pulsing to manage flooding and salt precipitation in zero-gap CO₂-to-ethylene electrolyzers

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Dynamic structural evolution of 2D/3D MoS₂@Ni heterostructure supported on SBA-15 during CO₂ RWGS reaction

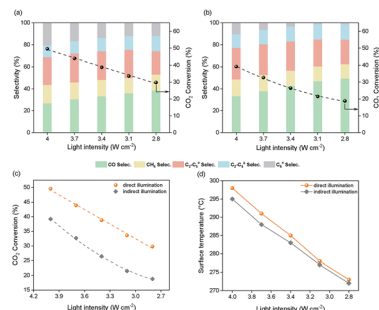
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Highly selective photothermal CO₂ hydrogenation to C₂⁺ hydrocarbons over Mn-modified K–Fe catalysts

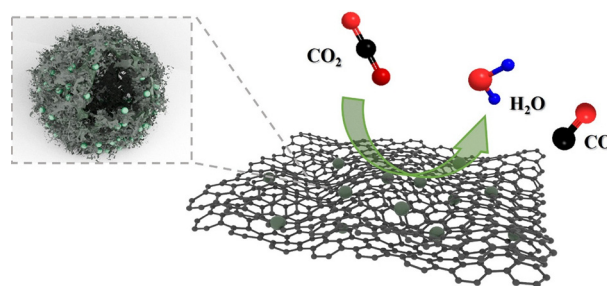
Xinhuilan Wang, Alejandra Rendón-Patiño, Diego Mateo* and Jorge Gascon*



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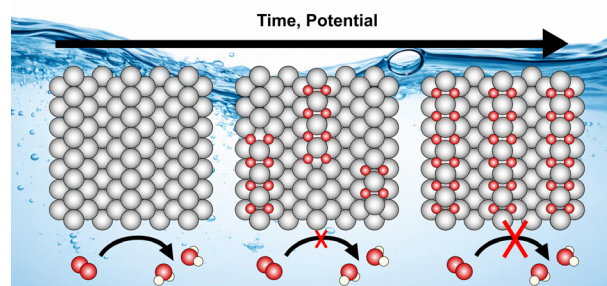
Songjiang Wu, Di Wang, Haijian Wang, Haiyan Chen, Xinyu Zhuang, Shenjie Yu, Hao Zhang,* Suqin Ci* and Zhenhai Wen*



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Platinum surface oxides govern the cathodic overpotential of the oxygen reduction reaction

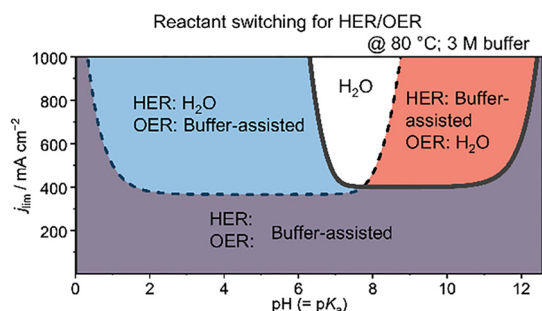
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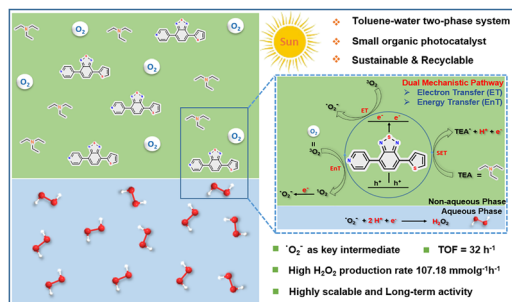
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Quantifying buffer transport-limited water electrolysis under non-extreme pH conditions via numerical simulations

Melody Wada, Keisuke Obata and Kazuhiro Takanabe*



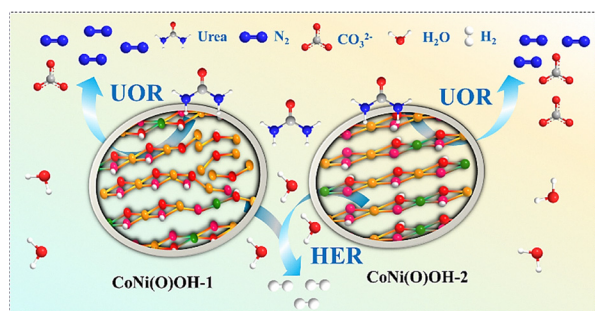
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Natural-sunlight-harvesting benzothiadiazole-based molecular photocatalyst for H_2O_2 production: a recyclable homogeneous biphasic system

Ajeet Singh, Aditya Mohan Shukla and Saumi Ray*

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Anodic activation-mediated formation of a crystalline–amorphous heterojunction of CoNi(O)OH for improved urea oxidation activity

Toufik Ansari, Manshu Dhillon, Vijay Patel, Aviru Kumar Basu and Arindam Indra*

