

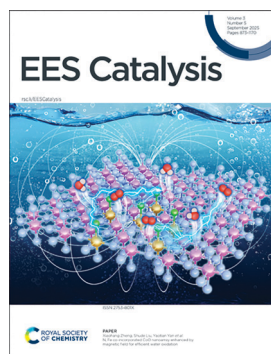
# EES Catalysis

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## IN THIS ISSUE

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### Cover

See Xiaohang Zheng, Shude Liu, Yaotian Yan *et al.*, pp. 1044–1054. Image reproduced by permission of Xiaohang Zheng from *EES Catal.*, 2025, 3, 1044.



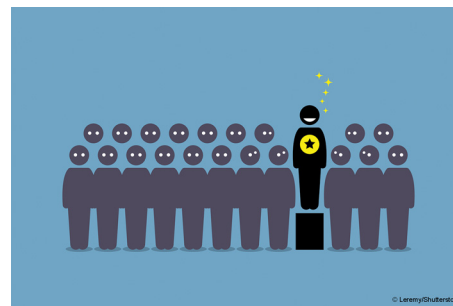
### Inside cover

See Meenesh R. Singh and Joseph Gauthier *et al.*, pp. 883–920. Image reproduced by permission of Meenesh R. Singh from *EES Catal.*, 2025, 3, 883.

## EDITORIAL

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### Outstanding Reviewers for *EES Catalysis* in 2024

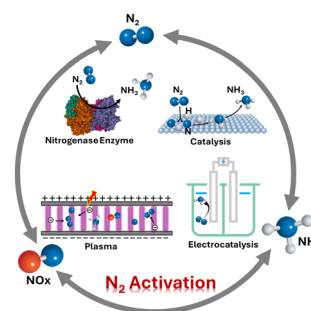


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### Advancements in dinitrogen activation for catalytic breakthroughs

Vamsi Vikram Gande, Nishithan C. Kani, Ishita Goyal, Rohit Chauhan, Yancun Qi, Samuel A. Olusegun, Joseph A. Gauthier\* and Meenesh R. Singh\*





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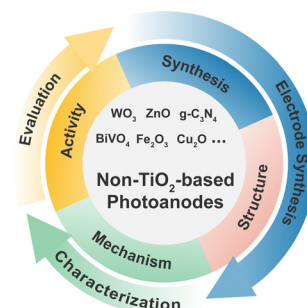


## REVIEWS

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### Non-TiO<sub>2</sub>-based photoanodes for photoelectrocatalytic wastewater treatment: electrode synthesis, evaluation, and characterization

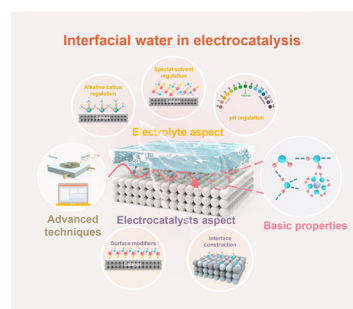
Jingyang Liu, Huizhong Wu, Jiangli Sun, Shuaishuai Li, Aydin Hassani and Minghua Zhou\*



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### Unlocking the potential: key roles of interfacial water in electrocatalysis

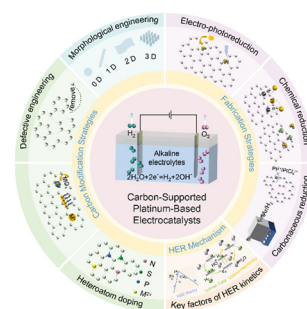
Zheng Tang, Zhongliang Dong, Lingjie Yuan, Bowen Li and Yinlong Zhu\*



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### Carbon-supported platinum-based electrocatalysts for alkaline hydrogen evolution

Qiuyue Yang, Jilan Zeng, Guowei Yang, Xinran Sun, Xiaohui Lin, Kunlong Liu,\* Jiayi Chen,\* Sibow Wang\* and Xue Feng Lu\*

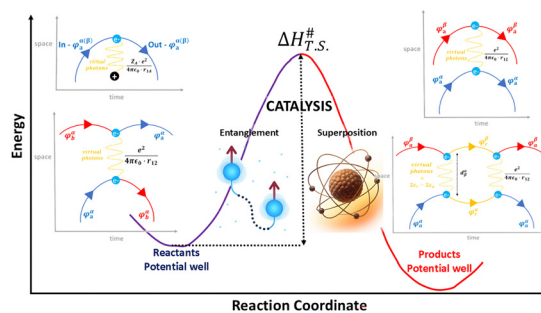


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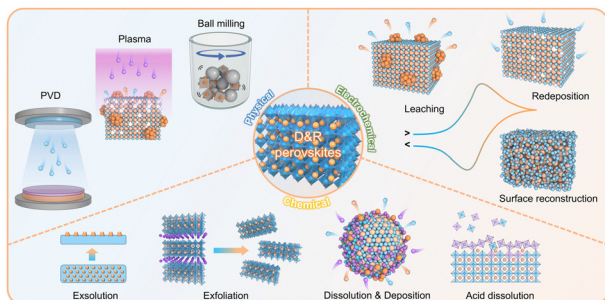
### Quantum catalysis

Jose Gracia



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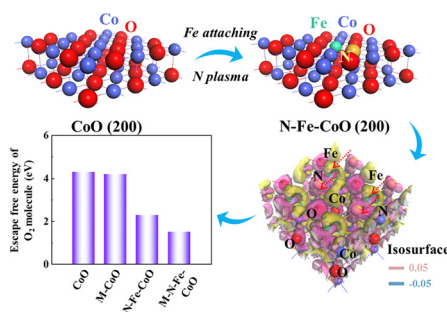


## Disassembling and reassembling perovskites for oxygen electrocatalysis

Gao Chen,\* Yubo Chen, Zezhou Lin, Ting Chen, Dongsheng Geng, Yanping Zhu,\* Wei Wang and Wei Zhou\*

## PAPERS

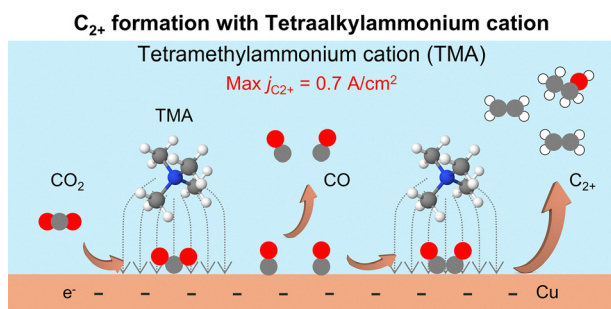
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## N, Fe co-incorporated CoO nanoarray enhanced by magnetic field for efficient water oxidation

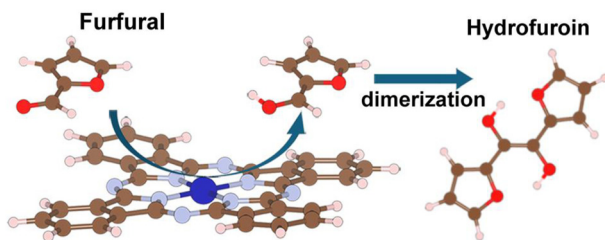
Keke Huang, Yaotian Yan,\* Yaqiang Yu, Taili Yang, Liang Qiao, Jinchun Tu, Jiehe Sui, Wei Cai, Shude Liu\* and Xiaohang Zheng\*

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Alkali-cation-free electrochemical CO<sub>2</sub> reduction to multicarbon products in aqueous electrolytes containing tetraalkylammonium cations

Ryo Kurihara, Shotaro Ito, Shintaro Kato, Takashi Harada, Shuji Nakanishi and Kazuhide Kamiya\*

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**Efficient FRR on Zn single atom center**  
**Easy desorption and suppressed HER**

## Furfural electrovalorisation to hydrofuroin with near-unity faradaic efficiency on a single-atom zinc catalyst

Jiaxiang Chen, Songbo Ye, Fangxin She, Xin Yang, Fangzhou Liu, Zixun Yu, Zhi Zheng, Ming Hong, Qiang Wang, Yuan Chen, Hao Li\* and Li Wei\*



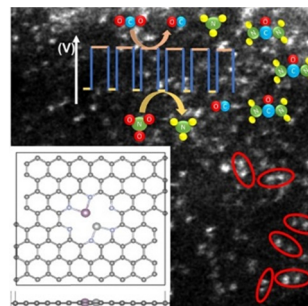


## PAPERS

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### Ni and Mo atom pairs as single sites on N-doped graphitic carbon for urea formation by simultaneous $\text{CO}_2$ and $\text{NO}_3^-$ reduction with pulsed electrocatalysis

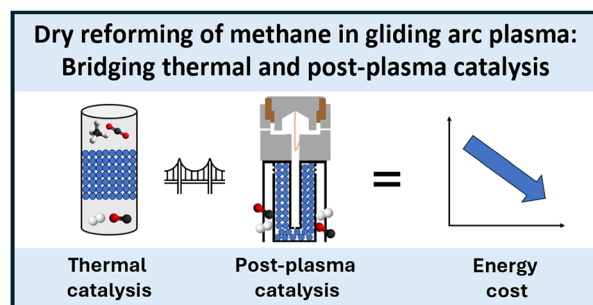
Jiajun Hu, Silvio Osella, Josep Albero\* and Hermenegildo Garcia\*



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### Dry reforming of methane in gliding arc plasma: bridging thermal and post-plasma catalysis

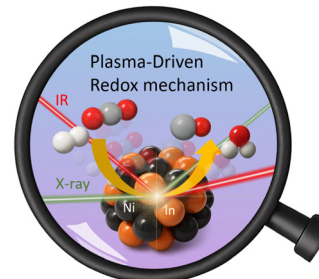
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### Plasma-driven redox mechanism in the reverse water-gas shift reaction over Ni–In intermetallic catalysts

Dae-Yeong Kim,\* Zhang Wenjun, Kaiyue Dong, Bang Lu, Duanxing Li, Satoru Takakusagi, Shinya Furukawa and Tomohiro Nozaki

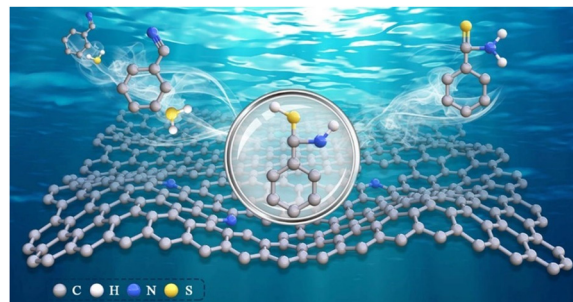


✓ Kinetic study ✓ *In situ* TIR ✓ *In situ* XAFS

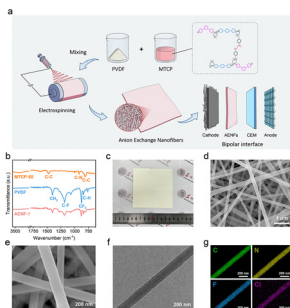
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### Atom-economical insertion of hydrogen and sulfur into carbon–nitrogen triple bonds using $\text{H}_2\text{S}$ via synergistic C–N sites

Ganchang Lei, Jiayin Wang, Xinhui Liu, Shiping Wang, Shijing Liang, Lijuan Shen,\* Yingying Zhan\* and Lilong Jiang\*



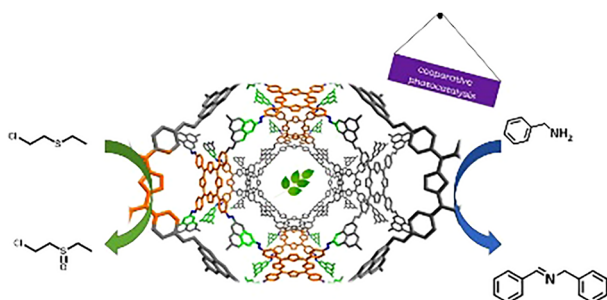
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### Biphasic anion-exchange nanofibers enable bipolar junction engineering for enhanced electrocatalytic CO<sub>2</sub> conversion in acidic media

Peng Liu, Fenglei Lyu, Xiya Yang, Zhangyi Zheng, Wei Hua, Shiwei Mei, Mutian Ma, Haojun Wang, Xiaolin Ge, Liang Wu, Tongwen Xu, Zhao Deng and Yang Peng\*

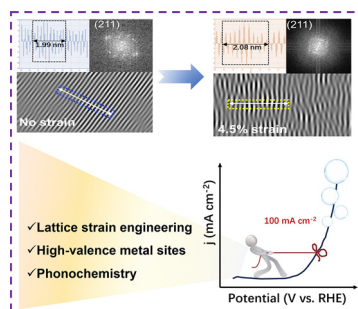
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### Three-in-one approach to fabricate a porous porphyrin-heptazine polymer for highly efficient visible light photocatalysis

Weijie Zhang, Zhou Lu, Dipesh Adhikari, Shan Li, Thamraa AlShahrani and Shengqian Ma\*

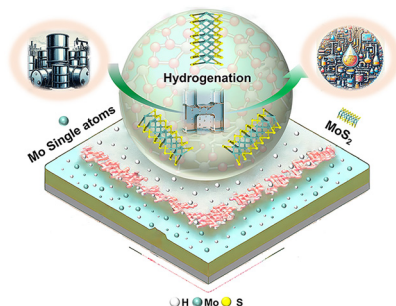
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### Inhibiting overoxidation of an $\alpha$ -MnO<sub>2</sub> electrocatalyst by the lattice strain effect for efficient water oxidation

Fang-Yi Li, Shan Guan, Jianming Liu, Changhao Liu, Junfeng Zhang, Ju Gu, Zhaosheng Li, Zhigang Zou and Zhen-Tao Yu\*

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### Spontaneous generation of an atomically dispersed Mo and MoS<sub>2</sub> coupling catalyst *via* reaction induction transformation for enhancing local hydrogen concentration in hydrogenation

Guangxun Sun, Peng Xue, Changle Yue, Yang Li, Hongfu Shi, Xin Zhang, Fengyu Tian, Junxi Li, Zekun Guan, Bin Liu, Zhi Liu,\* Yunqi Liu\* and Yuan Pan\*





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## Amino functionalization of the support toward enhanced selective hydrogenation of dimethyl oxalate to methyl glycolate on silver–silicon catalysts

Guilin Dong, Haiyong Wang, Qian Jiang, Yuhe Liao and Chenguang Wang\*

