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Carbon Future

● **Carbon anodes for lithium-ion batteries** 9200017

in honor of Professor Yong Jin on his 90th birthday

Removal and conversion of TCE 9200015

MOFs and COFs for photocatalysis 9200018

Multi-atom catalysts 9200019

CoSb intermetallic catalyst 9200020



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Reviews

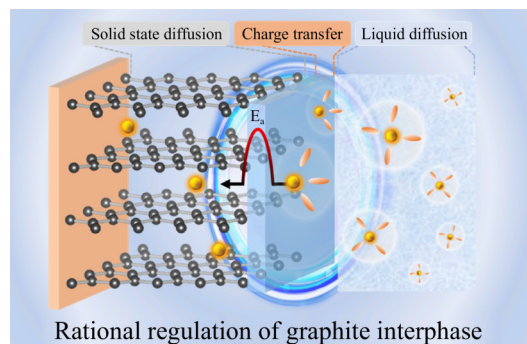
The future of carbon anodes for lithium-ion batteries: The rational regulation of graphite interphase

Strategically regulating the graphite interphase can enhance the interfacial charge transfer kinetics, thereby contributing to the development of next-generation powerful Li-ion batteries.

Bin Cao, Mengjiao Du, Zirong Guo, Huan Liu, Chong Yan, Aibing Chen, Xiang Chen, Cheng Tang*, Jia-Qi Huang*, and Qiang Zhang*

Carbon Future, **2024**, *1*, 9200017

<https://doi.org/10.26599/CF.2024.9200017>



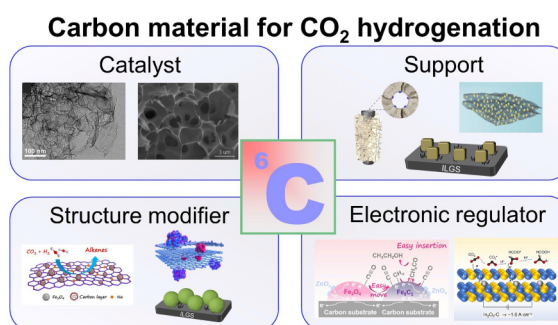
Carbon-based material for CO₂ catalytic conversion applications

This work reviews the development strategy of carbon-based catalysts for CO₂ hydrogenation into valuable chemicals in our group. Carbon species could play many roles during catalyst preparation and reaction process.

Wenhang Wang, Yang Wang*, Xiangjin Kong*, Hui Ning, and Mingbo Wu*

Carbon Future, **2024**, *1*, 9200016

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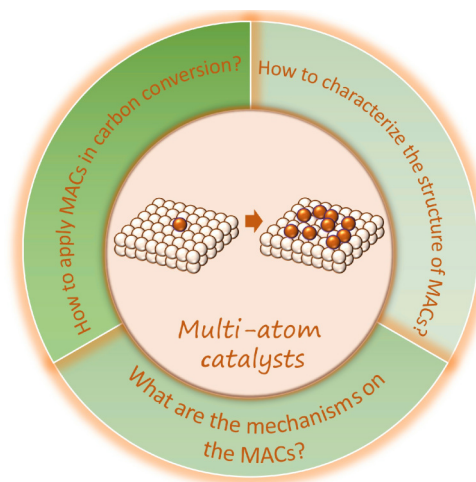
Multi-atomic catalysts: Pioneering applications in the pursuit of carbon neutrality

Overcoming the challenges faced by multi-atomic catalysts (MACs) in CO₂ reduction reaction (CO₂RR) applications requires a comprehensive approach that includes advancements in synthesis, characterization, reactor design, and computational modeling. This collaborative effort promises to unlock the full potential of MACs, paving the way for the large-scale use of CO₂ as a sustainable chemical feedstock.

Jiarui Yang* and Dingsheng Wang

Carbon Future, **2024**, *1*, 9200019

<https://doi.org/10.26599/CF.2024.9200019>



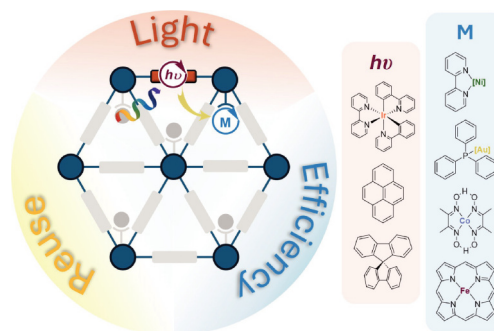
Rational design of multifunctional framework materials for sustainable photocatalysis

Rational design of framework materials leads to highly efficient and reusable photocatalysts for artificial photosynthesis and organic transformations.

Yingjie Fan and Wenbin Lin*

Carbon Future, **2024**, *1*, 9200018

<https://doi.org/10.26599/CF.2024.9200018>



Research articles

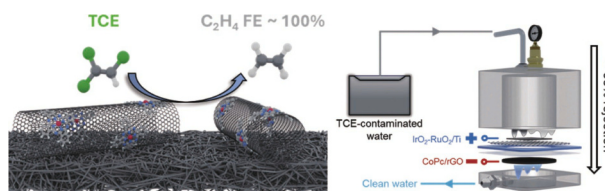
Effective electrochemical trichloroethylene removal from water enabled by selective molecular catalysis

Catalytic electrodes based on cobalt phthalocyanine molecules supported on carbon nanomaterials are developed for efficient removal of trichloroethylene (TCE) from water and selective conversion into ethylene.

Yuanzuo Gao, Wanyu Zhang, Chungseok Choi, Bo Shang, Seonjeong Cheon, Aidan Francis Meese, Jae-Hong Kim, Donghui Long*, John Fortner*, and Hailiang Wang*

Carbon Future, **2024**, *1*, 9200015

<https://doi.org/10.26599/CF.2024.9200015>



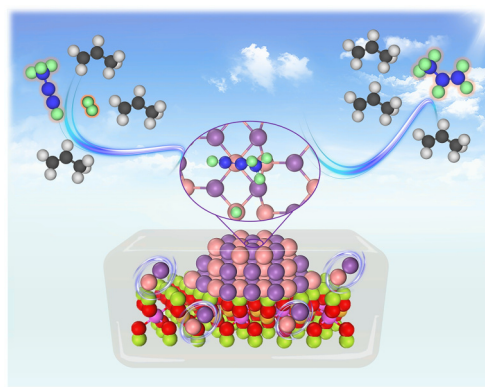
Regulation of cobalt active sites by antimony to match adsorption configuration for propyne semihydrogenation

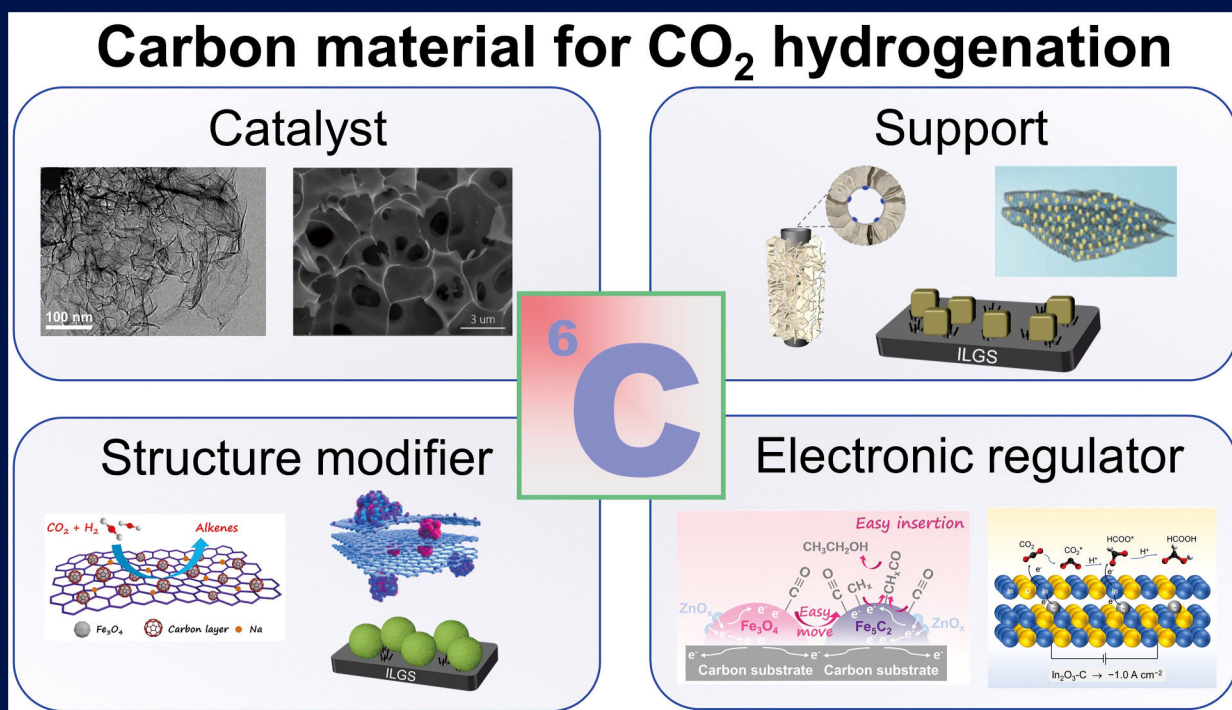
Catalytic hydrogenation pathways, exemplified by propyne semihydrogenation, are regulated by constructing a CoSb intermetallic catalyst. The Co active sites, tailored by high-electronegativity Sb sites, suppress strong σ -adsorption and facilitate weak π -adsorption of propylene, thereby enhancing propyne semihydrogenation.

Xiaohu Ge, Ziyue Kou, Nina Fei, Yueqiang Cao*, Hao Jiang, Xinggui Zhou, and Xuezhi Duan*

Carbon Future, **2024**, *1*, 9200020

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Carbon material for CO₂ conversion 9200016

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