
Electrocatalytic CO₂ Reduction to C₂+ Products

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Abstract:

The fast and continuous accumulation of greenhouse gases such as CO₂ and CH₄ has been bringing a series of irreversible effects on the environment. Using renewable energy sources, the electrochemical conversion of CO₂ and other carbon-based small molecules into value-added products represents a unique and important strategy for realizing carbon-neutral and energy storage. In this talk, I will discuss our recent efforts in developing electrocatalysts for conversion of C₁ small molecules toward hydrocarbons, alcohols, acids, and more complex products.^[1-5] The interplays between catalytic centers with reaction pathways will be discussed.

References:

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Biography:



Prof. Gengfeng Zheng obtained his bachelor degree (2000) at Fudan University, and PhD degree (2006) in Chemistry at Harvard University, and was a postdoctoral fellow at Northwestern University in USA (2007–2009). Since 2010, he has been a full professor at Fudan University, and was a recipient of National Science Fund for Distinguished Young Scholars, Shanghai Shang-Si Award, Nano Research Young Innovators Award in NanoEnergy, Clarivate Highly Cited Researcher (2018–2025), and other awards. He has published over 300 papers as corresponding author in international scientific journals. His research interests focus on the nanomaterial-based photo/electrocatalytic conversion of C₁ small molecules, such as CO₂ reduction and CH₄ oxidation.