

عنوان مقاله:

Carbon Dioxide Electrochemical Reduction over Metal and Metal Free Nanostructures: Recent Progress and Future Perspective

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خلاصه مقاله:

Research in the area of electrocatalytic reduction of CO₂ to value-added products has grown briskly in the past few decades. This is due to the increasing amount of CO₂ in the atmosphere and a steady rise in global fuel demand. Serious efforts are urgently needed to minimize to CO₂ emission and enhance sources of global energy demand. Electrochemical reduction (ECR) of CO₂ is considered to be the best solution which not only reduces the increasing CO₂ accumulation but also produces valuable fuels and chemicals. Sluggish kinetics, high over potential, low selectivity, low durability and competitive side reactions are the focal issues, to overcome these problems an efficient electrocatalyst is needed. Here in this mini review we had tried to discuss the fundamental factors that greatly influences catalytic activity of the catalyst in the light of updated experimental and computational data, which include size, crystal plane, grain boundary, metal metal-oxide interface and finally a brief note on metal free catalyst and .future perspective of ECR of CO₂

کلمات کلیدی:

Electrochemical Reduction, nanomaterial, metal free catalyst, ECR CO₂, metal alloys, value-added products

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