

A Novel Metallic Using Metal-Organic Framework for Electrochemical Reduction of CO<sub>2</sub> to CO

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Cu-MOF74 has several advantages, including uniformly distributed bimetallic ions, less tendency towards aggregation, and more stable interfacial sites than Zn-MOF74. In this study, Cu-MOF74, and Zn-MOF74 were synthesized using nitrate salt of Cu and Zn combine with 2,5-dihydroxyterephthalic acid (H<sub>4</sub>DOBBDC) were dissolved in DMF with stirring, and after that addition of DI water. The electrochemical reduction CO<sub>2</sub> (ERC) was taking place on an H-type cell in a 0.1 M KHCO<sub>3</sub> aqueous solution. The efficiency of Cu-MOF74 exhibited excellent electrochemical CO<sub>2</sub> reduction properties, including high CO selectivity (~ 85%) and low overpotential (< -1.9 V) than Zn-MOF74.

Keywords: Metal-organic framework (MOF-74), Electrocatalyst, Electrochemical reduction CO<sub>2</sub> (ERC).