Development Catalyst for Light Olefin (C2-C3) in the CO_2 Hydrogenation

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The reaction of CO2 hydrogenation means that H2 and CO2 instead of CO react in the catalyst to make a light olefin(C2-C3) which is important building -block chemicals. This reaction follows two ways that includes Reverse Water Gas Shift reaction and Chain growth reaction. In the RWGS, molybdenum carbide shows the good reaction properties compared to another metal active site.
Molybdenum also has been reported as excellent light olefin selectivity at FT reaction that use the CO and H2. We used molybdenum carbide as catalyst at CO2 hydrogenation and do a experiment by diverse synthesis method consisting Resorcinol-Formaldehyde, TPR, UREA. HCP phase of molybdenum carbide show the best reaction results among the three kind of FCC, BCC, HCP. Depending on particle size, that catalyst got a different result of selectivity.