Cu-based mesopore coreshell catalysts for CO_2 hydrogenation to MeOH.

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Recently, in order to reduce CO_2, studies on methanol synthesis catalysts through hydrogenation of CO_2 have been actively conducted.

However, the conversion efficiency of CO_2 which is thermodynamically stable is low, and the stability of the catalyst has not yet been secured because steam is more involved during the reaction than the catalytic process for producing methanol through hydrogenation of CO.

In this study, we intend to develope and optimize a Cu-based coreshell type nano-catalyst that can efficiently and stably synthesize methanol through direct conversion of CO_2.

Coreshell nano-catalysts can keep the size of metal particles small and are expected to improve the stability as well as the activity of the catalyst.

Keywords: CO_2 hydrogenation; methanol; Cu-based coreshell; nano-catalyst.