



Methanol Production from Carbon Dioxide over Ordered Mesoporous NiGaCu Based Catalyst in Low Pressure Process

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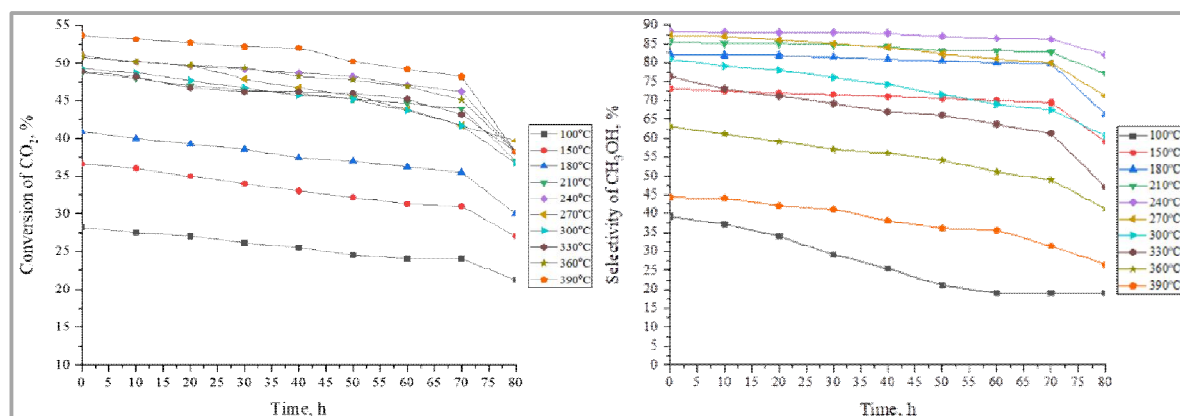
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ABSTRACT

This study covered characterizations of NiGaCu supported on mesoporous silica oxide (NiGaCu/MSO) catalyst for its ordered mesoporous structure and its state of the active sites, and the NiGaCu/MSO catalyst was applied in CO₂ to CH₃OH reduction process. Many parameters were investigated in the process, and the results showed that the process could be established under low pressure of 15 bar. Under this pressure, the catalyst activity was still very high leading to the CH₃OH yield of about 45%. Some techniques were applied in this study including XRD, EDX, XPS and GC-TCD-FID.

Graphical Abstract



Conversion of CO₂ and selectivity of CH₃OH over NiGaCu/MSO catalyst

Keywords: CO₂ conversion, promoter, copper based catalyst, Ni-Ga based catalyst.