

Studies on Nickel Based Granule Type Catalysts for Steam CO₂ Reforming of Methane

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Catalytic conversion of methane to syngas, a versatile feedstock for methanol and Fischer–Tropsch synthesis is of great practical importance. Syngas with the molar ratio of H₂/CO = 2.0 is required for Fischer–Tropsch synthesis over Co based catalyst. Steam CO₂ reforming (SCR) of methane is an attractive process for controlling syngas ratio. In GTL (gas to liquids) process, Generally small spherical granule or pellet type catalysts are commonly used in industrial reformer system.

Catalyst effectiveness factors are essential data for accurately simulating reforming processes, as well as for properly optimizing reactor design. Therefore, the effectiveness factors of nickel based granule type catalysts prepared by extruding and marumerizing methods was investigated and discussed for applications in SCR of methane.