The Effect of Solid Acid Catalysts on the DME Steam Reforming

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Dimethyl ether (DME) is scientific and technological interest as a hydrogen source for fuel cells. The reaction proceeded via a successive two step mechanism: hydration of DME to methanol over solid acids, followed by steam reforming of methanol to produce H2 and CO2 over copper oxide based catalysts. In this regard, the hybrid catalysts having activities required for each reaction step is used for DME steam reforming. Furthermore, since the step of DME hydration is rate-determine step, solid acid catalysts have an effect on DME steam reforming reaction. The effect of acidity was investigated in terms of DME conversion and hydrogen yield.