

عنوان مقاله:

DIFFUSION AND REACTION WITHIN A SHAPED NICKEL PEROVSKITE CATALYST

محل انتشار:

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خلاصه مقاله:

In this study, we prepared a $\text{LaNi}_{0.3}\text{Al}_{0.7}\text{O}_3$ perovskite catalyst using a sol-gel related method (with prop ionic acid as a solvent) for use in the methane dry reforming reaction to produce synthesis gas. We defined the catalyst structure on the basis of Xray diffraction analysis and measurements of the specific surface area and particle size distribution. The mixed oxide structure was shaped into a cylindrical pellet before being measured for its mechanical strength. the shaped perovskite catalyst was then tested in the methane dry reforming reaction to produce synthesis gas at atmospheric pressure. The results are compared with the predictions of a mathematical model that is used to estimate the concentration profile within the pellet. The outlet concentration of thereactants and conversion products calculated by the mathematical model has been consistent with the results obtained by experiments conducted in a .fixed bed reactor

کلمات کلیدی:

Nickel, Perovskite, Diffusion, Dry Reforming, Synthesis Gas

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