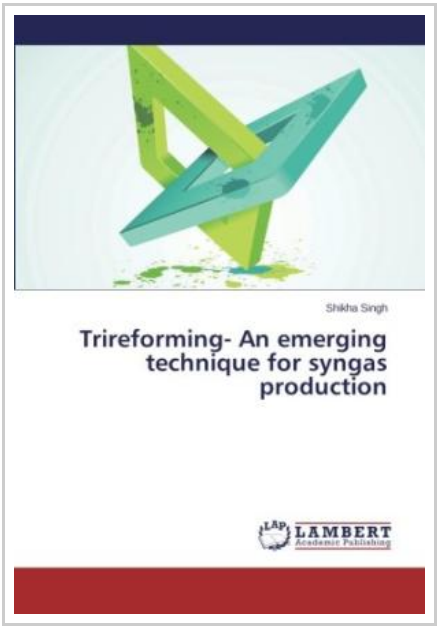

Trireforming- An emerging technique for syngas production

By Shikha Singh

LAP Lambert Academic Publishing Jan 2014, 2014. Taschenbuch. Book Condition: Neu. 220x150x6 mm. Neuware - The proposed work outlines the modeling aspects of kinetic evaluation for different types of reforming processes namely, Trireforming of methane (TRM), partial oxidation of methane(POM), Dry reforming of methane(DRM) and Steam reforming of methane(SRM). The results figure out Trireforming to be the most synergetic process as being combination of steam reforming, pom and dry reforming, it can not only produces synthesis gas (CO+H2) with desired H2/CO ratios(1.1 1.95) but also results in higher values of conversion for methane and carbon dioxide. These advantages have been demonstrated by tri-reforming of CH4 in a fixed-bed flow reactor at 1123K with supported nickel catalysts. Over 97% CH4 conversion and about 68 % CO2conversion can be achieved in tri-reforming over NiAl2O3 catalysts. The kinetic evaluation of partial oxidation of methane indicated the methane conversion to be around 96% with CO2 conversion of about 50.967% and H2/CO ratio to be in range of 1 -1.7.Though POM shows higher methane conversion but it lags in CO2 conversion and H2/CO ratio as compared to Trireforming. Moreover,in this process, oxygen is usually 40 50% higher than the required amount results excellence. 108 pp....

Reviews

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