

Autothermal reforming of propane over Ni-Ce-ZrO₂

공진화, 박남국, 신재순, 문동주¹, 김종호, 김영철*
전남대학교; ¹한국과학기술연구원
(youngck@chonnam.ac.kr*)

In this study, catalytic performance and characterization of Ni-Ce-ZrO₂ were investigated in autothermal reforming(ATR) for hydrogen production.

Ni-Ce-ZrO₂ catalyst prepared by co-precipitation and precipitation technique.

The effect of support composition as well as metal loading on ATR reaction was studied in a fixed-bed flow reactor, over a temperature range of 400 to 700°C.

The catalysts were characterized by various techniques.

Such as surface area, X-ray diffraction(XRD), Scanning electron microscopy(SEM), thermogravimetric analysis (TGA), and Transmission electron microscope(TEM) methods.

Ni-Ce-ZrO₂ showed the best performance in term of activity and stability.

Ni-Ce-ZrO₂ is good reforming catalyst in term of high resistance toward the carbon formation.