

Hydrogen production from low temperature WGS reaction over co-precipitated Cu-Ce_(1-x)Zr_(x)O₂ catalysts

정대윤, 나현석, 장원준, 한원비, 노현석*, 정운호¹, 윤왕래¹
연세대학교; ¹한국에너지기술연구원
(hsroh@yonsei.ac.kr*)

Water-gas shift (WGS) reaction has been carried out at the gas hourly space velocity of 72,152 h⁻¹ over Cu-Ce_(1-x)Zr_(x)O₂ catalyst prepared by a co-precipitation method. The CeO₂/ZrO₂ ratio was systematically varied to optimize Cu-Ce_(1-x)Zr_(x)O₂ catalysts. Cu-Ce_{0.8}Zr_{0.2}O₂ exhibited the highest CO conversion as well as the most stable activity ($X_{CO} > 41\%$ at 320 °C for 25 h). The excellent catalytic performance is mainly due to a strong metal to support interaction, resulting in the prevention of Cu sintering.