

Enhanced catalytic activity of Ni/CZA catalyst on methane steam reforming reaction for H₂ production: Effect of ceria-zirconia oxide and macroporous Al₂O₃

김상윤, 정해원, Dao Duc Quang¹, 왕명연, Nguyen Phu Huy, 신은우[†]
울산대학교; ¹university of ulsan
(ewshin@ulsan.ac.kr[†])

In this study, Ni/CZA catalysts with various CZ-alumina ratio were synthesized to investigate the effect of CeZrOx and macroporous alumina on catalytic activity of methane steam reforming reaction (MSR). Even though Ni/CZA catalysts have been researched so far, most of research used only mesoporous alumina. Macroporous alumina can influence on catalytic activity by providing better Ni dispersion and additional acidic sites. For a deeper understanding, Ni/CZA catalysts with mesoporous and commercial alumina used as control group. Ni/CZ-maA catalyst shows different morphology and catalytic activity with Ni/CZ-meA and Ni/Al₂O₃ catalysts. The change of interaction between Ni-CeZrOx-macroporous alumina was analyzed by TGA, Raman, and other characterization methods.