Development of Precious Metal Modified Ni-based Hydrotalcite Catalyst for LPG Steam Reforming

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Steam reforming of LPG over precious metal modified Ni-based hydrotalcite catalysts were carried out in a temperature range of 600 ~ 850 ℃, at atmospheric pressure with space velocity of 20,000 h^{-1} and feed molar ratio of H2O/C = 1.0 ~ 3.0. The catalysts were prepared by a co-precipitation and dipping methods. The Rh metal modified Ni-based hydrotalcite catalyst showed higher resistance for the sintering of active metal than Ni-based hydrotalcite catalyst prepared by conventional method. It was found that the Rh modified Ni-based catalyst showed high inhibition to the formation of carbon compared to Ni-based catalysts and maintained the activity at 800℃ for 1024 h. The results suggest that Rh modified Ni-based catalyst can be applied for the steam reforming of LPG.