

### Efficiency of dispersion for solvent collected on noble metals over hydrotalcite catalyst in propane autothermal reforming

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The performance of hydrotalcite catalyst in propane autothermal reforming(ATR) for hydrogen production was investigated in fix-bed flow reactor. Reactions were conducted with a feed stream of H<sub>2</sub>O/C/O<sub>2</sub>=3/1/0.37 in the temperature range from 300 to 700 °C. Catalysts were characterized by XRD, SEM, EDX and TEM methods. The modified noble metal enhanced the catalytic activity due to the higher resistance to coke formation. During the manufacturing of noble metal modified hydrotalcite catalyst, various solvents(water, ethanol, acetone, ethylacetate) were used to dissolve the noble metal. The effects of the changing of solvents were much smaller size of nickel particles then those of the other preparation. Also, nickel particles degree of dispersion increased. It is expected that changing of solvents on noble metals increased hydrogen selectivity and reduced catalyst deactivation.