Hydrogen Production from Aqueous-Phase Reforming of Glycerol over Ni based Catalyst

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Aqueous phase reforming(APR) of glycerol over Ni-based catalyst was investigated for the production of hydrogen . The Ni-based catalyst was prepared by an impregnation method, and characterized by N_2 physisorption, CO chemisorption, XRD, TPR, SEM and TEM techniques. The APR of glycerol over Ni-based catalyst was successfully carried out in a fixed-bed reactor system under the reaction conditions of low temperature and high pressure. It was found that the conversion of glycerol and selectivity of hydrogen were significantly affected by the amount of the Ni loading. The conversion of glycerol was increased with increasing Ni loading. However, H_2 selectivity was maximized which was depending of the amount of Ni loading and LHSV. The catalytic performace for APR of glycerol was compared with those of steam reforming(SR) of glycerol.