

ATR reaction stability of Ni/perovskite supported on Mo modified Catalysts

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Autothermal reforming reaction has a few serious problem, such as carbon deposition. But lattice oxygen vacancy of perovskite catalysts have carbon deposition resistance. Perovskite catalysts with a general formula of ABO_3 exhibit high thermal stability and high lattice oxygen vacancy. A site metal in perovskite structure has a strong effect on thermal stability, while B site metal in perovskite structure acts active site. And it is well known that Mo metal is important material of Water Gas Shift reaction and Hydrogen production. So, to investigate reaction stability by Mo addition, Mo modified Ni/perovskite catalysts were tested. In this study, Mo modified Ni/perovskite catalysts were prepared by citric acid method of Sol-gel method. Perovskite catalysts were tested in constant pressure flow reactor with the reactant ratio of $H_2O/C_3H_8/O_2=8.96/1.0/1.1$. XRD, TGA and SEM were used to investigate morphologic construction, carbon deposition analysis, respectively.