

## Hydrogen Production via the Steam Reforming of Methane over Zeolite Supported Ni Based Catalysts

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Hydrogen is primarily produced via the steam reforming of natural gas. As an important component of the hydrogen economy, developing technologies on H<sub>2</sub> stations are essential for both combustion engines and the fuel cell powered vehicles (FCPVs).

Ni based catalysts supported on various Zeolites have been initially studied. Ni/Y catalysts has shown superior catalytic performance compared to the other catalysts. All catalysts were synthesized by an impregnation method. The synthesized catalysts before and after the reaction were characterized by SEM, TEM, XRD, N<sub>2</sub>-physorption, H<sub>2</sub>-TPR, NH<sub>3</sub>-TPD and TGA analysis techniques. The catalytic performance for steam methane reforming was carried out in a fixed bed reactor at severe reaction conditions for screening the prepared catalysts. It was found that the promoted KIST-YMD1 catalyst showed higher catalytic activity and coke resistance than the Ni/Y catalyst.