

The effect of preparation method on Ni-MgO-Ce-ZrO₂ catalysts for CO₂ reforming of CH₄

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The effect of preparation method on Ni-MgO-Ce-ZrO₂ catalysts was investigated in CO₂ reforming of CH₄. Co-precipitated catalyst exhibited higher activity as well as stability ($X_{\text{CH}_4} > 95\%$ at 800 °C for 200 h) than impregnated catalysts due to high surface area, high dispersion of Ni, small Ni crystallite size, and easier reducibility. In addition, four elements (Ni, Mg, Ce, and Zr) are located at the same position for the co-precipitated catalyst, resulting in easier reducibility.