Preparation of Ni-Pd catalysts by incipient wetness impregnation method for partial oxidation of methane

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Ordered mesoporous SBA-15-supported Pd-Ni catalyst was prepared by incipient wetness impregnation method and analysed. For comparison, SBA-15-supported Ni catalyst was prepared and analysed. The mesopore structure of catalysts were confirmed via nitrogen physisorption and TEM imaging analysis. The crystallinity of catalysts was observed by wide angle X-ray diffraction.
The catalysts were pre-reduced at 700 ℃ for 6h. The reaction temperature was 700 ℃. Pd-Ni@SBA-15 catalyst was less deactivated than Ni@SBA-15 catalyst after Catalytic partial oxidation of methane (CPOM) reaction. Spent catalysts were confirmed coke formation by TGA analysis.