

Shape effect of CuO in inverse CuO@CeO₂ catalysts for PROX reaction

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The reactivity depends on the crystal plane of the catalyst for structure-sensitive reactions. Thus, controlling the shape of nanoparticles is important aspect of desired catalyst synthesis. Nowadays, synthesis of the shape-controlled CuO has attracted considerable attention as substitute catalysts due to the cost and limited availability of precious metal. Copper with excellent catalytic property is used as catalysts in copper-ceria systems for PROX (preferential oxidation) reaction. Recently, inverse model catalysts of CeO_x nanoparticles supported over Cu have shown a high catalytic activity in PROX reaction. In this study, sheet-like nanostructure of CuO was synthesized. Ceria was deposited on sheet-like CuO supports. The catalytic activity and selectivity of CeO₂/CuO catalysts with CuO nanosheet were evaluated for PROX reaction. This catalyst was characterized by TEM, SEM, XRD.